

MARCH 28, 1936

Railway Age

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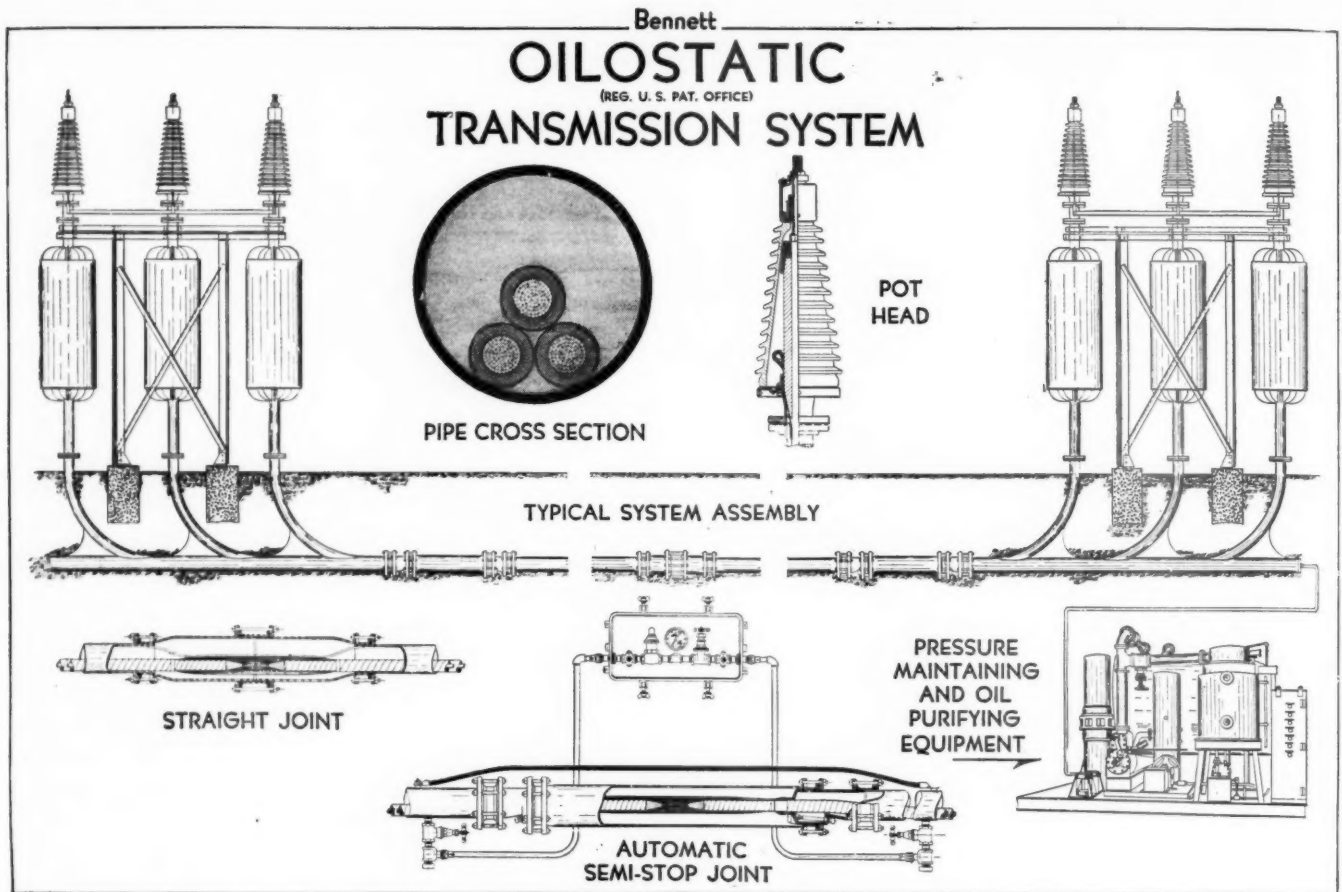
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Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 100

March 28, 1936

No. 13

Published every Saturday by the
Simmons-Boardman Publishing
Company, 1309 Noble Street,
Philadelphia, Pa., with editorial
and executive offices: 30 Church
Street, New York, N. Y., and 105
West Adams Street, Chicago, Ill.

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Terminal Tower

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832 National Press Building

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55 New Montgomery St.

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The Railway Age is a member of
the Associated Business Papers (A.
B. P.) and of the Audit Bureau of
Circulations (A. B. C.).

Subscriptions, including 52 regular
weekly issues, payable in advance
and postage free; United States and
possessions, and Canada, 1 year
\$6.00, 2 years \$10.00; foreign coun-
tries, 1 year \$8.00, 2 years \$14.00.

Single copies, 25 cents each.

In This Issue

What the Floods in Pennsylvania Did to Railroads.....Page 524

Neal D. Howard, eastern engineering editor of Railway Age, presents an eye-witness account of what actually happened in Pittsburgh and to the east, and how railroad men met the challenge.

New Streamliner Delivered to Illinois Central..... 534

A description of the Green Diamond, comprising five articulated cars built by Pullman, which will begin operation between Chicago and St. Louis on May 17.

Seaboard Has Many Highway Operations..... 545

A Motor Transport Section article telling how this road uses train-connection services and large streamlined rail-buses to keep and increase its passenger traffic.

EDITORIALS

Working Conditions by Negotiation or by Legislation?	521
Value of Weight Saved in Rolling-Stock Design	522
The Cost of a Train Stop	523

GENERAL ARTICLES

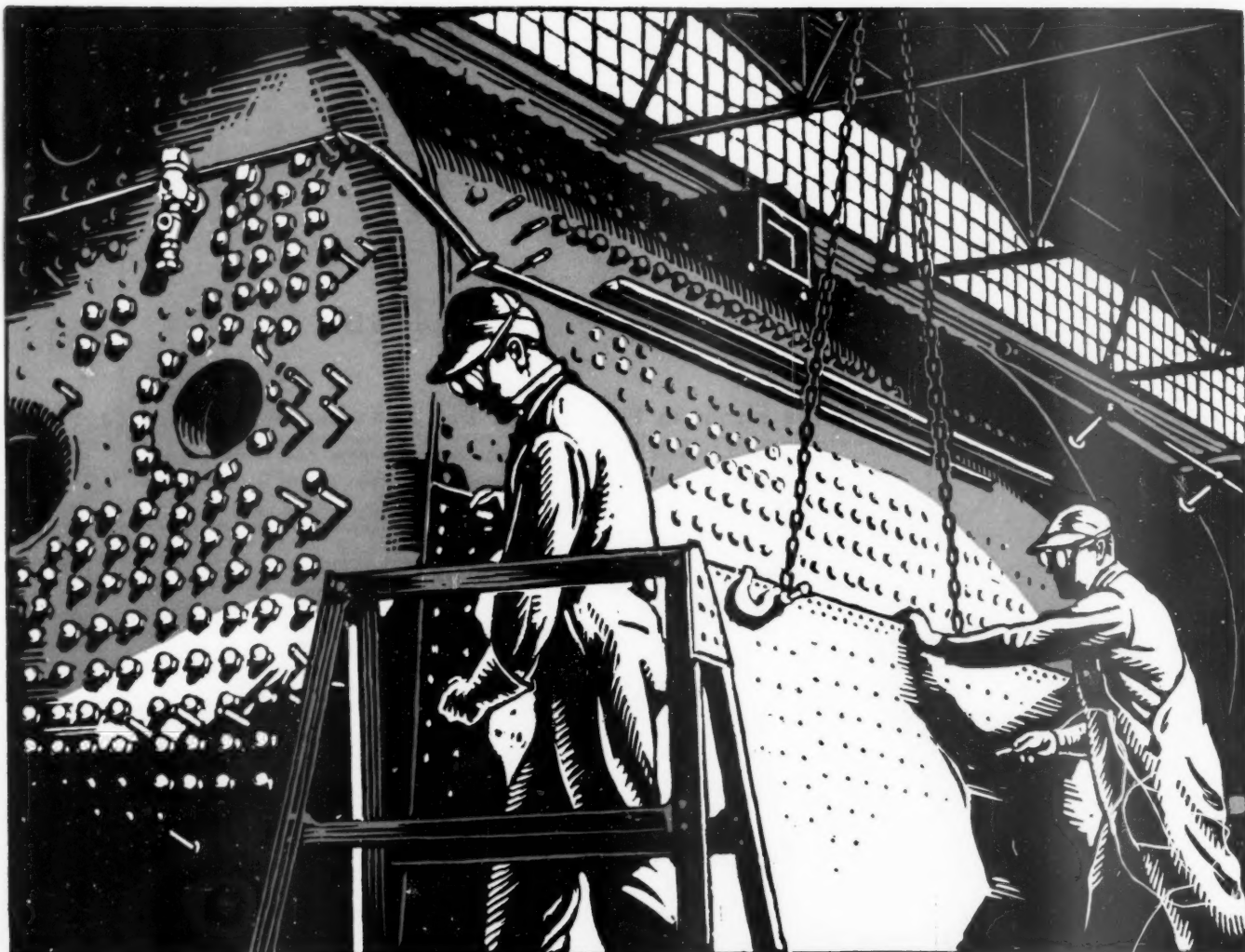
What the Floods in Pennsylvania Did to Railroads, by Neal D. Howard	524
New Streamliner Delivered to Illinois Central	534
Freight Car Loading	536
The Government and Transport, by Joseph B. Eastman	537
Boston & Maine Rail Car	539
Annual Report of Pullman Incorporated	540
Long-Short Haul Repeal Bill Passed by House	541
Railroads Resuming Normal Services After Disastrous Floods	543

MOTOR TRANSPORT SECTION

Seaboard Has Many Highway Operations	545
Two New Studebaker Buses	547
Mountain Operations Prove No Obstacle	548
New Rail-Highway Unit	550
Filing of Motor Tariffs Again Postponed	550
Santa Fe Bus-Truck Operations Prove Successful	551
New Macks	552
Rail-Highway Transportation Takes New Spurt	553

NEWS..... 555

The Railway Age is indexed by the Industrial Arts Index and also by the
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RAILWAY AGE

Working Conditions by Negotiation or by Legislation?

The President, after addressing a letter on March 8 to railway managements and labor union executives expressing his disapproval of settling union-management disputes by legislation rather than by negotiation, on March 19, according to a White House statement, "indicated to the Congressional leaders his desire that the continuance of these negotiations not interfere with the consideration of pending legislation bearing on the subject of railroad consolidation." The "pending legislation" referred to is, of course, the Wheeler-Crosser job-freezing bill, which is even more stringent than Section 7b of the Emergency Transportation Act of 1933 in making it impossible to furlough or demote railroad employees in the interest of economy.

What kind of "negotiations" are possible when one of the parties "negotiating" is thus virtually promised legislation of its own writing granting every concession which is under discussion? The President's action in behalf of this legislation is, in effect, an about-face from the stand he took in his March 8 letter.

Contempt for Collective Bargaining

Wage rates, working conditions, pensions, stability of employment—all these are matters proper to "collective bargaining," which is popularly supposed to be the underlying principle for which organized labor stands, but which, as a matter of fact, the railroad unions have almost completely thrown overboard. In "collective bargaining" each side has to defend its position with some show of reason. If the negotiators cannot agree, the question may be submitted to arbitration, but, in that case also, the victor will have to have some facts with which to convince the arbitrators before he wins an award.

But when union-management disputes are settled in the political arena, the question of justice does not enter; the only matter at issue then is—which side

has the more votes? Since that query can usually be resolved in favor of the labor unions, it is no wonder, when they have a demand that will not stand up under fair and impartial scrutiny, that the unions are afraid to trust it to collective bargaining and run to Congress with it instead. That the present main objectives of the railway labor unions—job-freezing, the six-hour day, pensions, "full" crews—are precisely the type which would crumble under impartial scrutiny is clearly evidenced by the fact that they are being sought through politics rather than by collective bargaining.

President Roosevelt's letter of March 8 showed penetrating understanding of the folly of cluttering up the statute books with details of railway working conditions the proper place for which is in union-management agreements. But the unions were displeased by the President's letter, and now he asks for negotiations and a law.

Eastman Not a "Yes Man" for the Unions

It is an interesting fact that the bill the labor organizations have written is an entirely new one; they are not seeking, as they have in the past, to perpetuate the protection they enjoy under Section 7b of the Emergency Transportation Act of 1933 by extending that act. The reason is not far to seek; because extending the Emergency Act would also extend the office of Federal Co-ordinator of Transportation, and Mr. Eastman has been far too outspoken about the wastefulness of frozen job-holding on the railroads to endear himself to the labor politicians. Only last week, on the same day that President Roosevelt decided, after all, not to stand in the way of the Wheeler-Crosser job-freezing bill, Mr. Eastman said in a speech at Detroit:

The way to make work for railroad employees is not to provide or maintain labor opportunities which are wasteful and unnecessary, for in the long run, and not so very long,

either, that is a losing game. The better way, and in fact the only effective way, is to do everything possible to enable the industry to attract the business which it is potentially best fitted to handle, through better service and lower rates.

Such a view, of course, is rank heresy to the predominant policy of the labor unions, and the only government officials whom they ever tolerate for long are the "yes men." Hence their desire not to prevent Mr. Eastman's relegation next June to his quasi-judicial position on the Interstate Commerce Commission where his duties will not include pointing out at frequent intervals the ludicrous absurdity of the "make work" policy of the railway labor organizations.

The handling by government officers and political leaders—with Mr. Eastman an honorable exception—of matters in which labor unions are interested is an amusing, but not very edifying spectacle. Senator Wheeler last week made a radio address in which he lambasted the railroad industry for lack of progress and high rates, comparing them unfavorably with the automotive industry. Not one word did he say about the labor union and regulatory straight jacket which is the railroads' principal handicap in meeting competition, and in passing along to their customers the benefits of technical improvements. Would the automotive industry have shown the reduction in costs that it has shown if the production per employee had been limited by labor union rules as the production of train service employees is limited?

Why Fruits of Improved Efficiency Are Not Passed Around

The service transportation employees render is measured in hours, but, in most train services employees are, under union rules, paid by the mile. Improved railway efficiency increased the average speed of freight trains from 10.9 miles per hour in 1923 to 16 miles per hour in 1935, or 47 per cent. But the fruits of this improved efficiency could not be passed on to railway patrons or any one else because they were almost entirely absorbed, under union rules, in shortening the work day of transportation employees. Straight time hours actually worked by the average transportation employee declined from 2316 in 1923 to 1799 in 1935—a decrease of 22 per cent—and freight train-hours per transportation employee declined from 172 in 1923 to 129 in 1935—a reduction in work performed per employee of 25 per cent. Meantime freight train-mileage per train service employee, which is the gage of wage payments, rose from 1868 in 1923 to 2064 in 1935, or 10 per cent. The millions of dollars which the railroads have invested in improvements to plant is largely reflected in increased train speed, whereas the fruits of higher speeds—the working rules being what they are—are for the most part absorbed by reductions in hours of labor of a favored class of employees.

It is folly to call names and accuse the railroads of lack of alertness in meeting competition, while over-

looking the fundamental conditions which preclude the flexibility which is essential in contending with a flexible competitor. Mr. Eastman has seen the light, at least in part, but Senator Wheeler plainly has not. "Full" crews, frozen jobs and time paid for but not worked are the incubus which prevents the railway industry from showing the competitive efficiency and flexibility which Senator Wheeler professedly would like to see it show. But the Senator proposes to strengthen this incubus—not destroy it.

Value of Weight Saved in Rolling-Stock Design

For many years the structural steel producers have been reluctant to undertake the development of materials which would interfere with the tonnage production of carbon steels in plates and shapes. No small amount of effort was put forth, both in the laboratory and the mill, toward the end of cheapening the process and improving the quality of the carbon-steel products.

For some years past the industry has been encouraged to develop a structural material, stronger than carbon steel, that would not depend on heat treatment for its improved physical properties, which could be used to reduce weight in railway rolling-stock construction. Contrary to their traditional attitude toward the development of new materials, the steel industry in this case took the desire for stronger structural materials seriously and brought out a new type of alloy steel which can be used without special heat treatment. As its strength is obtained by the alloying elements with a relatively low carbon content, the higher tensile strength of the material is obtained without sacrifice of ductility or undue sensitiveness to heating in process of fabrication.

Wide Variety of Low-Alloy Steels Available

Since first exploited the variety of these so-called low-alloy steels has rapidly multiplied until some fifteen or sixteen steels of varying analyses are now available. From the standpoint of weight reduction the increase in resistance to corrosion which some of these steels have shown is of equal importance with their greater strength.

As would be expected at the outset, these steels are more expensive than the carbon structural materials which they can be used to replace. Some increase in unit price will, no doubt, be permanent because of the additional cost of the alloying elements entering into their composition. Beyond this minimum of increase, however, the price differential may be expected to decline, as the quantities produced increase and as steel-plant equipment and practice is adapted to the requirements of the new materials.

The initial price differential between the new mate-

rials and the conventional carbon structural steel has led to the consideration of a number of formulae to calculate the value of weight saved in rolling-stock design by which to determine the limits of additional cost which can be economically incurred in light-weight freight-car construction. In the *Railway Age* of March 14, page 425, L. K. Silcox estimates that weight saving justifies a maximum additional investment in the car of 0.45 cent per pound of weight saved under the least favorable conditions for economy. These conditions are operation on straight, level track without utilizing the tare weight saved for increasing the weight of the lading so that the only saving is the reduction in fuel consumption due to the lighter train load.

Added Cost and Weight Reduction

Weight reductions effected by the use of new alloy steel in cars already built have ranged as high as 8,000 to 10,000 lb. A saving of 8,000 lb. on a hopper car operating 10,000 miles a year under the conditions previously specified would permit an increase in price of only \$36 per car. Considering the reduction in the amount of material involved in the weight saving, however, an increase in pound price of the material itself of from 50 to 70 per cent would be possible even within this meagre limit. Under average operating conditions a much larger margin of saving per pound of weight will be effected than that set forth above without making any allowance for the probable effect of the more durable quality of the new steels on maintenance expenditures.

Now that such steels are available, the railroads can scarcely expect the ultimate evolution of price without doing their share in establishing a market for the material.

The Cost of a Train Stop

The time lost in bringing a fast train to a stop and then accelerating to normal speed, as well as the fuel wasted in this operation, are appreciable, although little actual data have been available on this subject. Several years ago the Illinois Central made extensive tests from which it established a cost of 50 cents, and a delay of 3 minutes, as the penalty for stopping an 11-car passenger train from a speed of 50 m.p.h. and then accelerating to that speed. The average cost with a 50-car freight train, pulled by a 2-8-2 class locomotive at 25 m.p.h. was fixed at 90 cents and the delay at 9 minutes. These tests were made on level track in summer weather.

The A. T. & S. F. has used \$2 as the average cost of a train stop on certain parts of its system. For years, the Missouri-Kansas-Texas has used \$1.50 as the cost of a passenger train stop and \$3 for a freight train stop, placards being mounted in each interlocking

tower warning levermen that each unnecessary train stop wastes an average of \$2.50. In 1929, the C. C. C. & St. L. made time-distance checks which proved that the installation of remote-control power switches at the two ends of a passing track saved from 4 min. 8 sec. to 6 min. 45 sec. in getting a train into a passing track, and from 6 min. 45 sec. to 9 min. in heading out, as compared with hand operation of the switches.

Although the time lost in making train stops is readily measured with accuracy, the figures as to actual money wasted have been accepted with some hesitancy by railroad officers because of the difficulty in measuring the fuel and water required to maintain the fire bed and water level during the test, and the further fact that the opinions of two expert observers may vary. It is, therefore, of importance to note that at the convention of the Signal Section, A.A.R., last week, the Committee on Economics presented a report on the cost of train stops, based on the energy consumed in making stops and accelerating again, on electrified territories where data are based on actual meter readings, eliminating questions of personal judgment and opinion.

Signal Section Committee's Figures

The committee's figures are based on an electrical energy cost of 1 cent per kw.h. at the locomotive, which is approximately the equivalent of coal at \$4 per ton on the tender. Accelerating a 1,360-ton freight train of 23 loads and 7 empties, from a stop to 45.8 m.p.h. required 5 min. and 12 sec. and consumed \$1.60 worth of energy. Accelerating a 915-ton passenger train of 11 cars from a standing start to a speed of 70 m.p.h. required 4 min. and 50 sec. and consumed \$2.70 worth of energy. The tests were made on track that was practically level. Data for various other tonnages and speeds are given in the report, which is published in the *Railway Age* of March 14, 1936, page 464.

Thus, for the first time, the railroads now have in a nut shell accurate data on which to base calculations of one factor of the cost of train stops. With proper allowances for grade and curvature, fairly accurate figures can be set up for the cost of starting and accelerating trains on any line. In making such calculations, due allowances must, of course, be made for wear and tear on equipment, crew wages, if on overtime, and, of perhaps even greater importance now, the time lost from schedules.

Having prepared figures for the cost of stopping and starting trains, this information can be used effectively to inform train crews, operators, levermen, and others connected with the operation of trains, as well as track forces, of the money wasted when an unnecessary train stop is made. Furthermore, such data can be used with confidence in estimating the savings to be effected by the installation of power-operated switches, interlockings or other signal facilities, the purpose of which is to eliminate train stops.



Just West of Johnstown, Pa., Long Stretches of Track Were Completely Wrecked

What the Floods in Pennsylvania Did to Railroads

An eye-witness account of what actually happened to the railroads in Pittsburgh and to the east, and how railroad men met the challenge

By Neal D. Howard

Eastern Engineering Editor

THE world knows pretty well of the havoc wrought to cities, towns and villages by the unprecedented flood conditions in a dozen or more of the eastern states, but little or nothing has appeared to tell of the ravages wrought to railway properties, except possibly at flooded passenger stations, or of the heroic untiring efforts of the railways to restore service which had been partially or completely disrupted. After four intensive days and nights in the railway offices and out on the tracks of the railways entering Pittsburgh, I saw something of flood damage and restoration efforts which may interest railway men as it interested me.

Seeking a "Lull" in Pittsburgh

That I happened to be in western Pennsylvania at the crest of the flood's damage and destruction, was only partly a coincidence. Returning to New York from the convention of the American Railway Engineering Association in Chicago, which came almost immediately on top of a two week's trip taking in more than 2,500 miles in the Southeast, and longing for a little lull before tackling numerous engineering articles which had fattened my brief case and piled high my desk, I stopped off at Cleveland on March 17, having decided to make a side trip to Pittsburgh to discuss immediate engineering and maintenance of way problems with our friends on the railways in that city. The day before I had climbed all over car dumpers at coal piers at Toledo, Ohio, and frankly, I was rather hoping that this trip to Pittsburgh would be more social in character than the source of additional "copy."

Catching the 1 a.m. Pittsburgh sleeper from Cleveland that night on the Pennsylvania, I lay down looking forward to a few days of pleasant visiting, with the comforts and congeniality at night of a good hotel or the Pullman Company. How much I was to be disappointed in this respect, I only realize fully now as I look back over the last hundred or more hours.

Puzzled, Hence Not Commuters

Arriving at the Pennsylvania station in Pittsburgh on schedule, on the morning of the 18th I arose and washed, feeling that my plans were well on the way to fulfillment. The first indication that all might not be well came as I approached the train concourse, where hundreds of people with puzzled expressions on their faces stood or hurried about. It was the morning commuting period, but knowing commuters and their habits from years about the different railway terminals of the country, particularly in the New York Metropolitan area, I could see quickly enough that these people were not commuters. Commuters don't stand around, and they seldom appear puzzled.

Dropping my grips and taking one look at a chalk board on the wall convinced me that something quite serious had happened. Without explanation, a notice on the board read "All trains north and east indefinitely delayed." Forgetting the ham and eggs I had looked forward to having in the Savarin restaurant in the station, I threw bags and camera into one of the "Your key is your check" lockers in the concourse and headed for the engineering and maintenance department of-

ices of the Pennsylvania on the eleventh floor. As I approached the elevators, the chief maintenance officer of the Central region stepped from one of them.

"Hello, Howard," he said. "We are surely having an interesting time on our railroad. Have you seen what is going on in town? Go on up to my office and take a look out of the windows. I will be up shortly."

I did not know where he was going, but assumed that it was for a bracing cup of hot coffee at the restaurant, because it was quite evident that the eyes that had been looking at me had not been closed for a long time.

Floods—Poor Pittsburgh and Its Railways

In his outer office on the eleventh floor, where I saw a number of familiar faces bent over a desk in a huddle, the conversation was intense and rapid. Some were talking on telephones. Other phones were ringing. A large mounted blueprint of the lines of the Central region stood on a chair nearby. The conversation included reference to dozens of towns, rivers, high water, washouts, slag, stone, cinders and work trains, which left no doubt in my mind that serious floods were occurring or had occurred along the line.

Recognizing that under similar tense conditions, even the prodigal son would have been given a ham sandwich rather than the fatted calf, I stood by without so much as making my presence known. Possibly two or three minutes passed before one of the men, breaking away from the conversation which was taking place, turned and recognized me.

"What in the world are you doing here?" he asked. "We are certainly having a tough time. Have you seen the floods? Have you had a look at Pittsburgh?"

Having seen nothing and being still in the dark as to the scope of what was taking place, I followed him to the window of the chief's office. Neither of us said very much, but one glance out the window toward the "Golden Triangle" of Pittsburgh, where the Allegheny and Monongahela rivers converge to form the Ohio, conveyed volumes of information. Not far away the streets were full of water. In the background huge billows of smoke rose from the blazing oil tanks of an oil company. To the right the Allegheny river was far out of its banks, and in freight yard areas one could see only the tops of hundreds of freight cars. The high buildings of the city and the foggy morning atmosphere prevented a good view of the Monongahela river, but it took little imagination to visualize the stage of the water on that side of the city and what was happening to the railway facilities of the Baltimore & Ohio and the Pittsburgh & Lake Erie on opposite sides of this stream.

The scene became more impressive when I was told that the river stage was 42 ft. at the point of the triangle, already 3.3 ft. higher than the previous record, and that the prediction was for a maximum stage of 43 or 44 ft. late in the afternoon. As a matter of fact, the crest of the flood at Pittsburgh



This Bridge at Johnstown Was Piled High with Debris and Was Subject to Terrific Water Pressure, But Held



All Four Main-Line Tracks of the Pennsylvania at Barree, Pa., Between Altoona and Harrisburg, Were Completely Cut Through



At Barree, Pa., in Addition to the Through Break in the Line, the track Embankment on the River Side Was Ravaged for a Distance of More Than 2500 Ft.



More Than a Hundred Miles of Tracks Were Washed or Deeply Inundated by the Floods in Western Pennsylvania, Causing Serious Interferences with Traffic



Approximately One-Third Mile of No. 3 Main Track on the Pennsylvania at Dornick Point, Near Johnstown, Was Deeply Undercut or Completely Destroyed



Hundreds of Loyal Officers and Employees on Every Railway Affected by the Floods Sprung Into Intensive Action as the Seriousness of the Situation Became Known



As Far as We Go—The 75-Ft. Gap in the Four Main Tracks at Barree, Pa.—Note the Undermined Signal Bridge in the Background



reached 46 ft. at about 8:30 p.m. that day, 21 ft. above normal flood stage, and 7.3 ft. above the previous high record.

Feeling that even one additional question or word might be confusing to my friends, who through the night had been grappling with flood conditions unprecedented in the entire Pittsburgh area, I said little or nothing. Sheafs of reports received by telephone and telegraph were handed to me from time to time with no further explanation than that floods prevailed along all of the rivers in western Pennsylvania, extending at least as far east as Johnstown where the reports were that a flood exceeding that of the great disaster of 1889 had swept through the town.

Off for Johnstown and—?

After hurriedly scanning the brief written reports I asked but one question: "Is there any way to get out east over your line to see some of these floods?" The answer was indefinite. I was told that many communication lines were down or out of service, so that no one knew how far trains might proceed to the east. A moment later I was told that sections of the line over which I had just arrived from Cleveland had been damaged at several points; that the branch line down the Ohio to Wheeling, W. Va., was none too well off, and that the main line east over the Pittsburgh division had experienced wash-outs at numerous points east and west of Johnstown. The Panhandle division to Columbus and the West was still open with little likelihood of being damaged and I was assured that I could go places in that direction—but that did not interest me in the least at this particular time.

Knowing that the last word on train departures in any direction in the emergency would be directly at the train gates, I bid a hurried adieu and a few moments later found myself, with nothing but camera in hand, on a special passenger train which was just leaving eastward for, in the words of the conductor, "as far as we can go." I was given to understand that the fondest hope was to reach Altoona, but that no one knew exactly what conditions would prevail within 20 miles west of Johnstown and a dozen or more miles to the east of that city. Everyone seemed to know that Johnstown had been hard hit.

It was not difficult to get information, such as was available. On the train were at least five railway officers leaving for the flooded areas in the eastern half of the Central region, including a division engineer, a supervisor of bridges and buildings, a representative of the chief engineer at Philadelphia, a master carpenter and a track supervisor. There was little difficulty in carrying on conversation with these men, and, as far as the 75 or more passengers on the train were concerned, they all seemed to want to talk at one time. Carnival spirit prevailed among the passengers, who looked forward to almost anything, at least to being among the first to get out of flooded Pittsburgh, and possibly to see some of the flooded areas further to the east.

This was the first passenger train out in a dozen or more hours, but not the first train, since during the night before a special relief train bearing boats,

Just a Short Section of the Thousands of Feet of Telephone and Telegraph Pole Lines Which Were Down and Twisted on the Pennsylvania

food, cots, blankets and other supplies had already been dispatched to the Johnstown area. Others were to follow.

With most of the railway men on the train I stood in the rear vestibule with my camera in hand, not knowing when we would strike the first scenes of flood. At Wilmerding we ran into high water north of the tracks, which flooded a number of industrial plants and buildings, but since it did not affect the main tracks, I paid little attention to it.

Conemaugh Division Hard Hit

As the miles passed, we saw little evidence of flood or high water until we reached the Conemaugh river near Torrance, Pa., approximately 50 miles from Pittsburgh. From that point, for a number of miles east, the main line of the Pittsburgh division over which we were riding appeared little the worse for high water, but across the river the havoc played by the flood waters of the river was clearly manifest in the double-track Conemaugh division of the Pennsylvania, along which destruction could be seen at numerous points. Each mile brought new views of track or roadbed destruction.

At a few places huge slides completely covered the tracks. At others the river had gouged the embankment shoulder for hundreds of feet to directly beneath the ends of the ties. Then we came upon several long stretches of the eastbound track lying twisted in the river, exposed now since the water had receded from its peak the night before. For miles, it was evident, this branch had borne the brunt of the river flow. Not only the tracks, but long stretches of telegraph lines lay in the river, and at least two signal bridges had been undermined and lay across the tracks. What had happened further up the Conemaugh line, which follows the Conemaugh river more or less to its confluence with the Kiskiminetas river, and thence along the Kiskiminetas to the point where it empties into the Allegheny, could only be conjectured at the time, but I learned later that many points throughout this entire division had been abused mercilessly by the Conemaugh, normally a placid stream tumbling northward over a rocky bed.

As we moved east, information reached us that the Bolivar and Bald Eagle branches had been damaged quite severely, and it was only too evident from the train window that the extension of the Conemaugh line east of Conpitt Junction, on the north side of the river, to within about two miles of Johnstown, was as severely damaged in places as the Conemaugh line itself.

Main Line Abused West of Johnstown

From Seward eastward, the first evidences of high water damage to the main line tracks of the Pittsburgh division became evident, but at no point until within about three miles west of Johnstown had the water closely approached the track level or caused serious wash of the wide track embankment. At this point, however, in a wide swing in the valley and the river, known as Dornick Point, the river bank shoulder of the three-track main-line embankment had been

Two Huge Steel Barges, Each Loaded with 850 Tons of Coal, Neatly Blocked the Three Main Tracks of the P. & L. E. at Pittsburgh When Waters of the Monongahela Subsided



Tons of Perishable Produce Were Fouled and Destroyed as the Swollen Allegheny Flowed Deeply Through the Pennsylvania's Large Produce Terminal at Pittsburgh

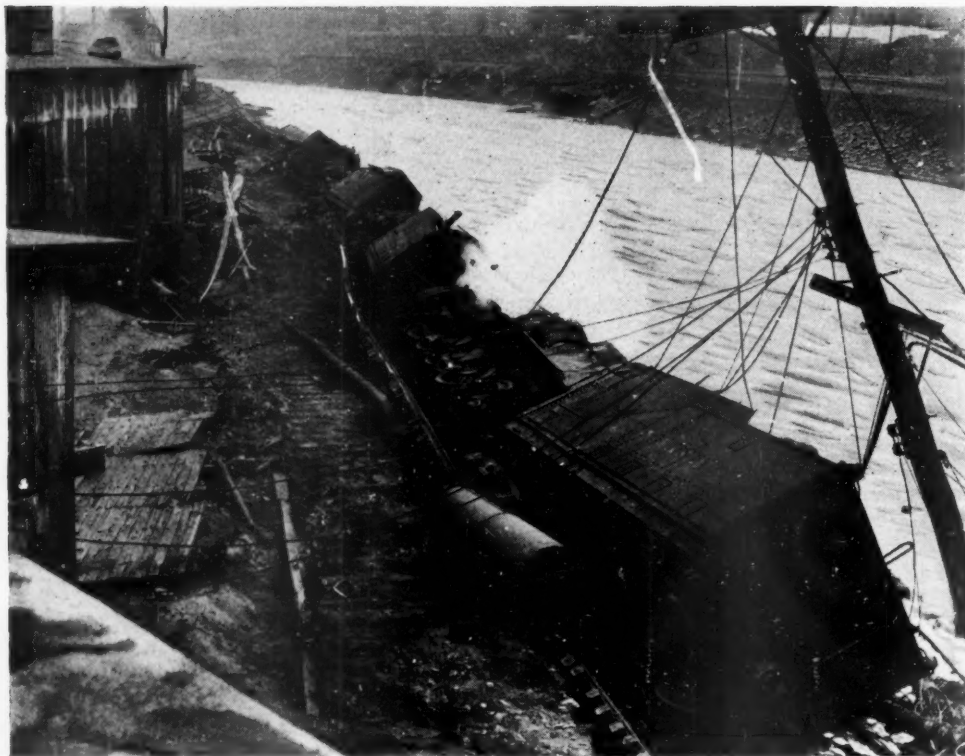


The Johnstown Station of the Pennsylvania After the Flood—Note the Piles of Debris and the High Water Mark on the Building Face



Wrecked River Craft and Debris of Every Description Fouled Both Industrial Lines of the B. & O. Along the Allegheny at Pittsburgh





Four Locomotives, Undermined and Topped Into the River at Conemaugh, Pa., Stopped Erosion Which Would Have Undercut and Wrecked the Engine House There

gouged for approximately $\frac{1}{3}$ mile to a near vertical position beneath the ends of the ties of Track 3. For 1,000 ft. or more this gouging action had completely undercut this track, which lay twisted in the river, and had even seriously undermined the ends of the ties of Track 2, leaving a single track railroad close to the hillside, safe for operation.

Immediately east of this damaged section for a mile or so, the tracks had been treated less rudely, although the shoulder of Track 3 was so washed at points as to require extensive filling before it might be restored to service. Between one and two miles from Johnstown, Track 3 and an outside auxiliary track for several thousand feet had been partially or totally undercut by the surging high waters of the river, and several hundred feet of the auxiliary track lay twisted down the newly cut river bank.

A Wreck Train Spreads Itself

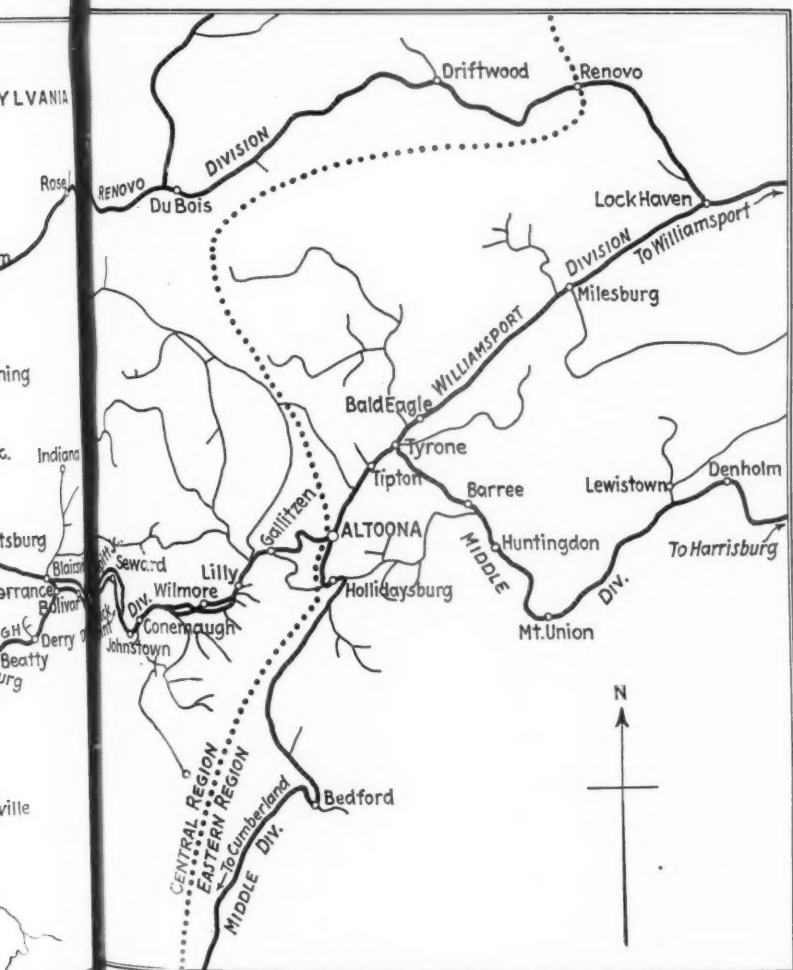
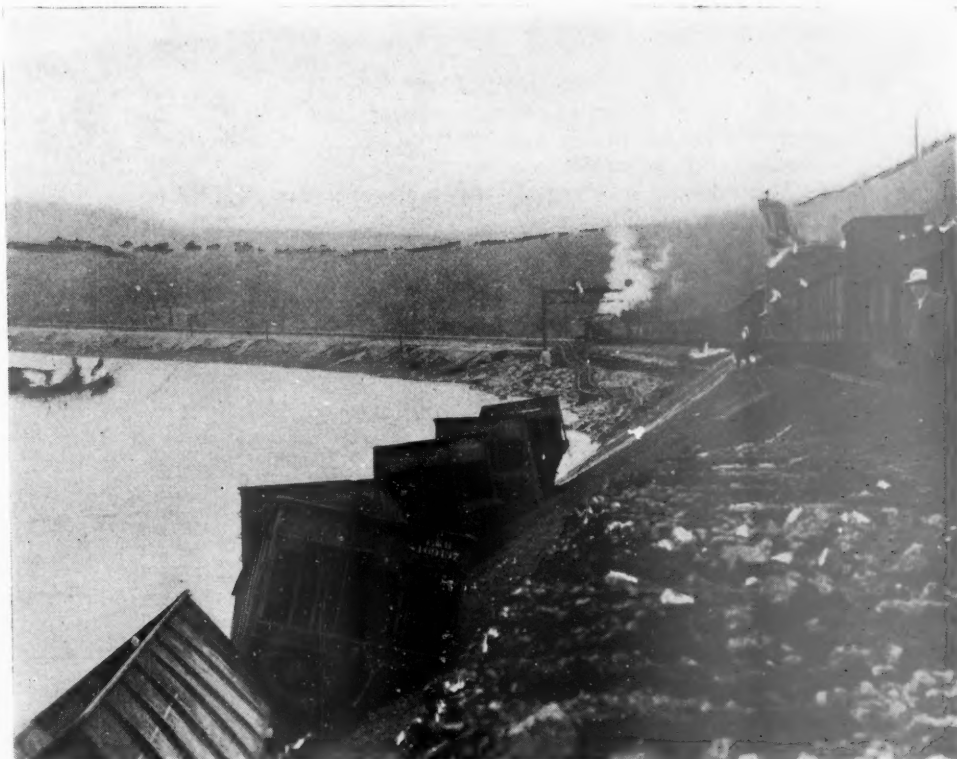
As the train approached the damaged tracks at Dornick Point, it was about 4:30 p.m., $5\frac{1}{2}$ hours out of Pittsburgh on a normal $1\frac{1}{2}$ -hour run. The passengers, who had dwindled in numbers by now to a couple dozen or so, were becoming rather weary and hungry, including myself, since I had forgotten to have a bite of breakfast at Pittsburgh. The dining car which would have normally been attached to the regular morning train out of Pittsburgh was not with us and it was left, therefore, to the hospitable crew of a wrecking train, alongside which we had stopped, to bring smiles of satisfaction back to the faces of interested yet weary travelers. Everyone was invited to have coffee and sandwiches on the wreck train, and if anyone refused, it escaped my attention.

Well-dressed men, several in working clothes, and four women telephone operators who had been hurried on to our train at Pittsburgh for relief duty at Johnstown, climbed out of the passenger train and into the commissary car of the wreck train. Here, the wreck-



Sketch Map of the Pennsylvania's Lines in Western Pennsylvania, Which Were Destroyed by the Floods of the Atlantic States During the Week

More Than 20 Steel Hopper Car Bodies Were Placed in the Bend in the Conemaugh River at Dornick Point to Buttress New Filling Material and Prevent Subsequent Wash



train crew, with every gesture of courtesy and good nature, made everyone feel comfortable and at home on the wooden benches lining the walls, that had probably never before offered their welcome hospitality to revenue passengers. As coffee and huge sandwiches were passed, the carnival spirit of the passengers again prevailed. Everyone was in good humor, completely concealing any inward anxiety or disappointment that may have been felt at the long delays that had occurred.

Johnstown Ahead

After passing Dornick Point, everyone was all eyes for Johnstown, only a few miles away. About 5:30 we were moving slowly into Johnstown, the town of flood fame, where in 1889 more than 2,200 people lost their lives when an old dam gave way and loosed a 40-ft. wall of water over the unsuspecting populace. I had heard the story sketchily several times before, and now I was hearing parts of it again from passengers who had read the early editions of the Pittsburgh morning papers—incidentally, the last newspapers to be printed within Pittsburgh for several days.

What we should see in a few moments we could only conjecture. The reports had been that the present conditions; except as regards the loss of life, were at least as serious as those following the record flood of the eighties. We did not have to wait long. To the south of the tracks as we entered the city, the rock bluffs, thinly earth-covered, rose abruptly from the track level. To the north lay relatively low land which, only too obviously, had been deeply submerged; it was swampy and covered with debris of every description. Beyond on the same side lay the river, again, less than 16 hours following its peak flood stage, well back within its normal channel.

I shall not attempt to describe conditions at Johnstown; I did not see the city as many others saw it since I allowed my eyes to leave the tracks and the immediate vicinity of the railroad only in fleeting

glances. But there was, happily, little railroad damage to see. Located high above the city streets which lay on both sides, neither the tracks nor the roadbed was even seriously threatened by the high water, except at the west approach to the road's long multiple-arch stone and concrete masonry bridge over the Conemaugh river just west of the passenger station. Here, the rising waters, completely submerging the arch openings and, buffeting the spandrel walls to within a few feet of the tracks, began to eat into the roadbed. Quickly detected by vigilant railway employees, who were patrolling almost every mile of the main line as the various rivers began to threaten, large rocks and tons of stone ballast were poured and rammed into the weakening gap faster than they could be eaten away. This situation, about which I had learned before leav-



Many Miles of Tracks on the Double-Track Conemaugh Division of the Pennsylvania Were Undermined, Wrecked, or Covered with Debris and Slides

ing Pittsburgh, was causing the gravest concern in the general offices of the road both there and in Philadelphia. By now the danger was over; the waters had receded; and all that remained at this point was a scar of freshly applied gray-colored ballast in the two-up-stream tracks.

Had there been only a few moments of confusion or of lost time at this critical point, this story would end here. I should never have seen the business section of Johnstown or some 15 miles of more or less ravaged track east of Altoona; to Tipton and Barree, Pa., at both of which points, the "Blue" Juniata had broken through beneath all four tracks of the main line, leaving the rails and ties suspended in the air.

Johnstown No Place to Visit on March 18

But I am getting ahead of the story, because our train has not yet arrived at the Johnstown station. An-

other delay at the bridge; then again the now familiar and welcome blasts of the locomotive whistle calling in the rear flagman, and we were on our way with the station only a few hundred feet ahead. Camera in hand, I thought I was getting off. As a matter of fact, when the train stopped at the platform, I bid a hasty goodbye to several newly-formed acquaintances and did get off.

I did not expect an official welcoming committee at the station, but I certainly did not expect what I saw. It was cold and getting dark. Possibly 50 or more people clambered on to the train amid loud exclamations of relief. They were people who had seen the horrors of the high waters surging mercilessly about them for hours and who had found a haven on the only dry spot within the city from which there was any hope of being carried to the outside world and safety for at least the next 12 to 15 hours. Of light, heat and drinking water there was plenty—on the train—and I was getting off.

Not for a moment was I concerned until I realized that I was completely out of step with everyone else. I was alone on the platform with but one man who was obviously a native of the town, none the better off for the flood, because he was roughly dressed and muddy nearly to the waist. He stepped up to me and said:

"You're not getting off here, are you? This town is deserted. There is not a person in it. No food, drinking water, heat or light; everybody has fled to the hills and it is expected that the dam will break at any moment."

I looked about. The streets that I could see were muddy and lifeless. The chill of a cold wet night hung about. I tried to hurry a decision as to what to do.

"If the dam lets loose it will take this whole town—houses, buildings, and everything else with it—better not stop here," the man continued. I said, "And the tracks and the platforms?" In a word he left no doubt in my mind but that they would be included.

Didn't Stay by a Dam Site

I pushed my thoughts still faster, (the train had not pulled out yet)—no drinking water, no food, no heat, no light—and a dam breaking—and all I had was a camera. Maybe the man was right. Besides, if the dam broke, I would get my film wet.

Skipping over a lot of details and reflections which I could now mention only with some chagrin, having backed down from a well-defined plan because of the threat of a little high water, I boarded the train again and eventually found myself beyond the summit of the Pennsylvania's crossing of the Alleghenys at Gallitzin, Pa.; past the famous horseshoe curve on the east slope, and in the office of the division engineer of the Middle division at Altoona. It was then about 10 p.m. The division superintendent, the division engineer, the assistant division engineer, the master carpenter, certain of the telegraph and signal forces, and a number of men on the division engineering corps were all on hand. They had been there for many hours and still had no thought of home or rest.

As I entered the room, a large one on the fourth floor of the office building, occupied by flat-top desks and drafting tables, the division engineer was talking on the phone with the engineer maintenance of way at Harrisburg. While still in this conversation, the system engineering office at Philadelphia wanted him on another phone. Then it was someone on still another line. I thought he would never finish talking and moving from one phone to another. Everyone else was

moving about and was busy—at what, I could not immediately determine.

Again there was talk of high water, washed tracks, signals out of service, telephone and power lines down, work trains, and need for men, construction timbers and hundreds of cars of filling materials. I stood by greatly surprised by what I was hearing. No one had even intimated before that the floods extended east of Altoona, and yet I was now hearing of flood conditions and heavy damage as far away as Harrisburg, Williamsport and Lock Haven.

Two long news telegrams to the print shop at Philadelphia, for the March 21 issue of the *Railway Age*, which was to be made up the following day, and I was back again in the division office, none the better off for the short trip across town, because it was raining like it rains only when nobody needs any more rain. Work trains with materials, men and equipment were to be dispatched at 4:00, 5:30 and 6:00 a.m. from East Altoona. Unconsciously I selected my train—the one which was going east to the two most serious washouts in the main line, under the direction of the assistant division engineer and the master carpenter.

Without going into detail as to what happened in the remaining hours of the night, which were packed full of telephone accounts of what had happened and what was being done on the line, suffice it to say that at 5:30 a.m. I was at "ND" yard office in East Altoona, ready to jump the work train going east. Large numbers of men were already assembling. They were dressed in stout shoes or boots and what appeared to be warm clothing, and everyone had a rain shed of some description over his shoulders, even if only a square yard of canvas with a head hole cut in it, because it was still raining hard and with no signs of a let-up. Bridge tools, hoisting ropes, tackle blocks, spikes and bolts were in readiness, so that when the work train, stocked since midnight with several thousand feet of bridge timbers, arrived, the men climbed aboard without delay and were off to repair the worst reported gap in the main line between Altoona and Harrisburg.

The Juniata Blues

It was becoming daylight as the train moved out. The rain had turned to a wet snow. The men, packed tightly in two warm cabooses, were in a light-hearted mood. It was as I had seen railway men on emergency jobs many times before. Nothing seems to matter until safe train operation is restored. I talked with many of them. Some had had only 3 or 4 hours of rest following 12 to 16 hours' duty the day before. Some said their clothes were still damp and heavy, but no one complained.

As we lumbered along, I could not help but compare this ride with the trips I had made on the "Hiawatha" of the Milwaukee and the "Zephyrs" of the Burlington only the Sunday before. But that was another and better day.

I stood on the platform of the rear caboose to catch the first glimpse of damaged tracks. I did not have long to wait. We soon struck the "Blue" Juniata, which the main line of the Middle division follows almost continuously for approximately 110 miles to the Susquehanna river at Duncannon, Pa. At Bellwood, less than eight miles from Altoona, the tracks had received the first severe lashing by flood water. Mile after mile the tracks of this four-track territory were washed or partially undercut. For thousands of feet, wide ditches, first on one side and then on the other, had been gouged deep below the track level.

At Tipton, the roadbed beneath all four tracks had been cut through for a distance of 20 to 30 ft. to a depth

of 8 to 12 ft. by what appeared to be a branch of the main river. One of the inner tracks here had been blocked up on heavy bridge timbers the preceding day by men from the gang with which I was now traveling. This allowed our train to pass with only a moment's delay.

The Worst Washout

Continuing eastward, conditions were more or less a repetition of what I had already seen, although now and then long stretches had been spared the force of the swollen Juniata and its many small yet violent tributaries. At Tyrone, which had been largely under water and the scene of widespread destruction, the main-line tracks were not damaged. Here, however, we learned that the Bald Eagle branch of the road, from Tyrone to Lock Haven, had been washed out at at least 8 or 10



For a Distance of at Least 2,000 Ft., the Fill Between Track 1 and 2, to a Depth of 10 to 12 Ft., Was Gouged Out in a Most Unusual Manner

points, one of the most serious of which was directly within Tyrone itself.

Near Barree, approximately 25 miles from Altoona, all four tracks, unbroken, were spanning a gap in the roadbed approximately 75 ft. long and 15 to 20 ft. deep. It was the worst stretch of damaged tracks I was to see. West of the gap for at least 2,000 ft., the embankment supporting the most southerly track, some 10 to 15 ft. high, had been washed away vertically to a point directly beneath the outer rail. Furthermore, the roadbed between this track and the next adjacent track had been gouged out for a similar distance to a depth of 10 to 12 ft., partially undermining both tracks.

In spite of the unusual character of this damage, and numerous breaks through what remained of the roadbed beneath the most southerly track, this track remained substantially at its original level, supported only by a

narrow vertical wall of cemented ballast-like stone beneath the center portions of its ties. Beyond the gap in the roadbed the most southerly track for several hundred feet lay on its side in the newly widened river channel.

Immediately upon arrival at this point, large numbers of trackmen began to remove the large quantities of debris that had spread over all of the main tracks, and the bridge men began unloading the timbers brought out on the train. At the same time, the supervisory officers were making hurried estimates of the quantity of filling material and additional trestle timbers required to repair the damage. When these estimates were completed, they were telephoned immediately to the division headquarters at Altoona, so that the needed materials could be dispatched at the earliest possible moment.

That there was telephone communication anywhere along this section of line with Altoona was most surprising, because telephone and telegraph poles for long stretches lay strewn along the track shoulder or in the river. Signals had fared little better than the tracks and telephone circuits, because only short stretches of them were in working order; several signal towers had been flooded, and numerous instrument cases along the river side of the railroad had been partially or completely inundated.

Conemaugh Damage Viewed

Back at Altoona late that night after several miles on foot and several changes in means of transportation, my first thoughts were for a couple of winks of sleep and to catch the first train west for Johnstown in the morning. No one knew just when a passenger train would move westward, except that it would undoubtedly be some time in the early morning. At 6:55 she pulled out.

Up around the Horseshoe curve, where I had been so many times before under better conditions, I retraced my route. At Lilly and at Conemaugh I now saw in the daylight evidences of severe track damage that I had missed in the darkness two nights before. At Conemaugh, an important engine terminal on the road, I saw a dozen or more tracks that had been deeply flooded and fouled, but it was not until later in the day, meeting the division superintendent and division engineer who were out on the road on a track motor car making a personal inspection of conditions, that I had learned that I had missed the worst of the damage at this point.

For a considerable distance directly alongside the large concrete coaling station and the engine house at Conemaugh, the river ate in menacingly near the foundations of both of these structures. The only thing that saved the engine house, I was told, was the fact that directly at the point of heaviest erosion four stored locomotives, with their tenders, had been undermined and had toppled into the river, forming a breakwater for the building foundation. It occurred to me that this appeared to be rather expensive riprap, but I let it go at that.

19 Fewer Hopper Cars Now On Line

I saw Johnstown on my return trip. At least 10 ft. of water had surrounded and flowed through the passenger station here, and outside on the station plaza the railroad company had been presented with tons of mud and debris. The Bethlehem Steel Company's through truss railroad bridge over the river at an elevation some 20 to 25 ft. below the Pennsylvania's tracks had taken a severe buffeting by waters high above its deck level, but, held down by a heavy trainload of steel bars and shapes hurriedly pulled out on the span, it was undamaged, except that it was littered with large quantities of debris.

It was nearing noon when I struck out on foot for

Dornick Point, about three miles west of Johnstown, where I had had a glimpse of severely damaged tracks two days earlier. Things looked different on the railroad now. Several long trainloads of freight and hundreds of cars of filling material passed me as I walked the river-side track which only too obviously was still out of service. At the point, which is anything but a point, 59 carloads of filling material had already been dumped into one deep hole; the middle of the three tracks had been repaired and restored to service; and a wrecking crane was in the act of laying a footing wall of old steel hopper car bodies in the river along the former toe line of the old track embankment.

With the swift river water still encroaching on the site of the part of the original embankment, it had been realized that without an artificial bulkhead or footing, any added filling material would be quickly washed away. Nineteen car bodies, removed from their trucks, were dumped into the worst section of this eroded area, and more cars were reported on the way. Almost immediately, carload after carload of mill slag, rock and cinders were dumped and plowed off in bank widening operations. Four hundred carloads were estimated as necessary to put the third track back into service in this territory, while an additional thousand carloads were called for for later delivery to restore the normal full width of the track fill.

Still at Work in Pittsburgh Office

Train service in this territory, and, in fact, from Pittsburgh to Altoona, had at no time been completely disrupted, although with only one or two tracks in service at several points at times, and with work and material trains dotting the line in restoration efforts, passenger service was far from regular. Realizing this, and that it was now three days since I had been in touch with my shaving outfit lockered in Pittsburgh, I had little hesitancy in climbing aboard the first passenger train that passed us westbound. Besides, I still did not know what had happened in the way of flood damage to the other roads in the Pittsburgh area.

Another night was spent in the regional maintenance of way office of the Pennsylvania at Pittsburgh—one might have thought by special design because of conditions which existed generally throughout the city. No lights, no heat, no drinking water and no power. I was offered a room on the eleventh floor of the William Penn hotel if I wanted to walk up by candle light, but I was too well off in the Pennsylvania's station—the only bright spot in the city. With its own power plant, high and dry, the combination station and 11-story general office building of the railroad was as normal as though nothing had happened. It even had an ample supply of good drinking water, hauled in in milk cans from Canton, Ohio, 100 miles away.

Up in the office, the same men were there that I had left on Wednesday morning, and the picture was much the same. Materials and equipment were still being lined up and dispatched. Three thousand cars of filling material had already been ordered for track repairs on the Central region, and yet this was equivalent to only what one of the divisions of the region was requesting.

Prepared for emergencies at any time, the Central region has for years maintained a constant line-up with industries and gravel and stone companies for the delivery of approximately 1,000 cars of filling materials a day on a few hours' notice. However, with high water flooding and crippling plants and pits throughout most of its territory, it was now having the greatest

difficulties getting as many as 550 cars a day from all available normal sources. Therefore, it was now reaching out in all directions for several hundred miles for any material quickly available, with the result that each day it was receiving more than 200 additional cars.

Damage Elsewhere in the Area

Much information had filtered through to the region headquarters while I had been away, as many lines of communication were re-established. The Ohio was on a rampage further downstream. The line to Cleveland, as far north as Rochester, Pa., was under water to various depths at points and had been severely washed at several places. Houses had been thrown or washed upon the tracks. The branch to Wheeling, was having severe trouble and the station tracks at Wheeling were reported under 10 ft. of water. The station at Williamsport had 6 ft. of water in its waiting room, and at Harrisburg, while the station itself was dry, the passenger tracks were covered to the height of car floors.

The Monongahela river was not giving much trouble. Six engineers from the bridge department of the Eastern region at Philadelphia had arrived via detour routes and had started east over the main line in a special train to inspect all bridges east of Altoona, supplementing a similar force working westward from Harrisburg. The bridge forces of the Central region had already hurriedly examined all main line bridges in the affected areas of this region and were still in the field checking conditions in detail.

There seemed to be no end to the information that had been amassed and which continued to come in, but the tenor of new reports was entirely different from that of those which had been received earlier. The situation was now well in hand, and everyone was cheered as report after report indicated that rivers were receding and that traffic was being restored over most of the main tracks, even those most severely damaged. Already, trains were being single-tracked over the gap at Barre, and a three- and four-track railroad elsewhere was being rapidly re-established.

B. & O. and P. & L. E. All Wet Too

I listened to these reports until about 4 a.m., and then slept until about 7:30 in an adjacent office on one of several cots furnished by the Pullman Company. It was Saturday, the 21st, and this day was spent in looking over railroad facilities directly within Pittsburgh. I talked with the engineers of both the Baltimore & Ohio and the Pittsburgh & Lake Erie. Neither of these roads appeared to have been hit as hard or as extensively as the Pennsylvania, at least as far as I could learn, but both had experienced water over miles of tracks and many severe washouts.

The Pittsburgh & Lake Erie main line through Pittsburgh and for approximately 13 miles east and west, a total distance of 26 miles, had been under from 10 to 12 ft. of water. Seven feet or more of water stood in the waiting room and concourse of its Pittsburgh passenger station, its terminal power house, and its extensive freight warehouse facilities, grouped together along the west bank of the Monongahela river.

Large Traffic Takes to Rails

About a mile downstream from the station, two large steel river barges blocked all three main tracks of the railroad, making through traffic impossible. These barges, each 175 ft. long and 26 ft. wide, and each loaded with 850 tons of coal, had ridden the high river waters to a position over the railroad and had then settled down directly on the tracks as the water receded. Even though

relieved of their cargo, these barges, weighing approximately 180 tons a piece, had defied all efforts up to Saturday evening to remove them, except that one, which alone had blocked the third main, had been slewed sideways sufficiently at one end to clear this track. With an auxiliary track alongside, this provided two clear tracks for through movement over the railroad at this point.

Along the Allegheny river at Pittsburgh, the facilities of both the Baltimore & Ohio and the Pennsylvania had been hard hit. Huge piles of debris and battered river craft, including large houseboats, blocked the B. & O.'s industrial branch lines along both sides of the river for approximately six miles. Everything here had been under water to a depth of 10 to 15 ft. Hundreds of both B. & O. and Pennsylvania freight cars along the water front, loaded and empty, had been partially or totally submerged, and the Pennsylvania's large produce terminal on the south side of the river, extending from Sixteenth to Twenty-first streets, had harbored water to a depth of 8 ft. above its platform level. The building itself was little damaged, but thousands of dollars worth of produce was either seriously damaged or completely destroyed, and was now being disposed of, truck load after truck load.

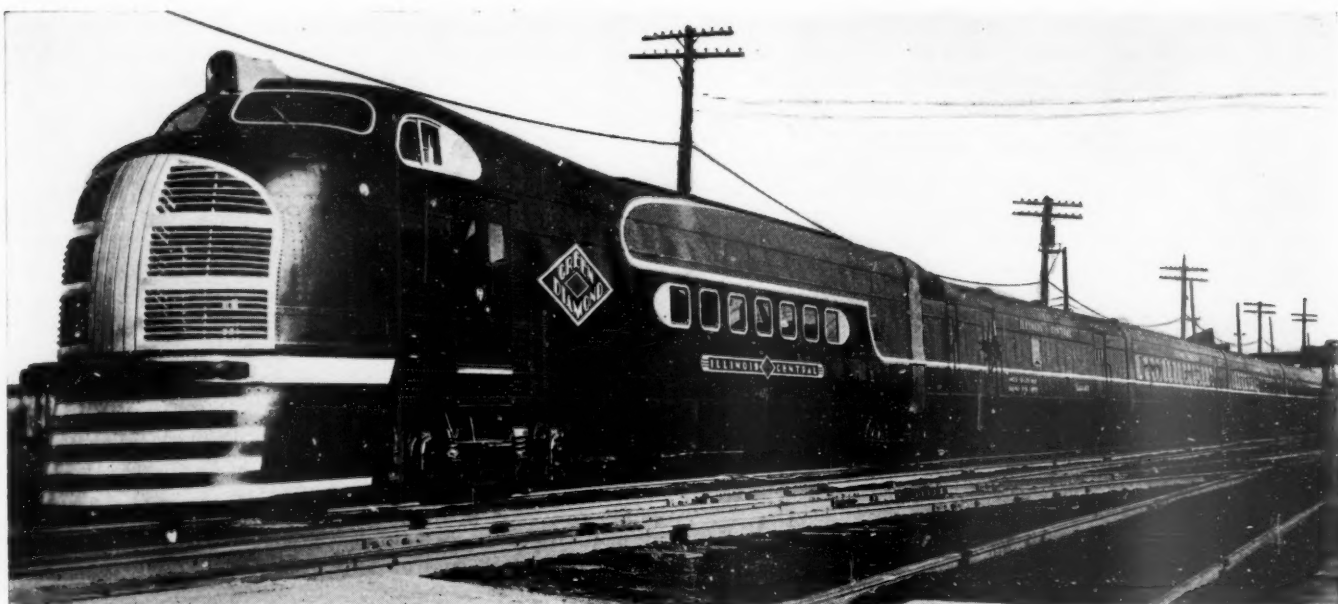
I learned that the B. & O. had been seriously damaged at a number of points, completely disrupting traffic on several sections of the road, but that this damage had extended west only to Etna, Pa., approximately six miles west of Pittsburgh. Here, 15 ft. of water had been reported over the tracks. Directly at Pittsburgh, the road's passenger station was high and dry, and the main passenger tracks were not seriously damaged, although for approximately $\frac{1}{2}$ mile from the station they had been under four to five feet of water and had been covered with silt and debris.

I had seen much, but my job of seeing flood damage was not over. The delayed Pittsburgh papers, which were being published out of town because of flooded plants and a complete power failure, were carrying headlines of floods in New England and in Maryland. The Connecticut, the Merrimac and the Potomac rivers were on a rampage. Hartford and Springfield, Conn., were under water. Almost at my office door in New York it seemed. I must get back. A train was leaving at 7:50 p.m. and it found me aboard. Now I'm back in New York, ready to start out again.

A Real Fight—and Real Fighters

While I was intensely interested in what I had seen in the way of flood damage in western Pennsylvania, the thing that impressed me most was not the extent and character of the damage sustained by the railroads, but rather the manner in which railway men, both officers and employees, accepted the situation and buckled down to meet and correct it. Every personal consideration and comfort was dropped the moment the seriousness of the floods became known. Smooth working organizations, primed by news of lines damaged and traffic delayed or disrupted, went almost instantly into high gear. Every man found his place. Every man knew his duty. Long hours, lack of rest, unusual problems and physical hardships were accepted as a challenge, almost eagerly. It was the great game of railroading in one of its most critical moments and every man was playing the game.

PLANS FOR GRADE CROSSING PROJECTS to the amount of \$87,237,000 had been approved by the Bureau of Public Roads up to March 21 under the \$200,000,000 program, and contracts had been awarded to the amount of \$48,417,126. This included \$1,962,487 during the week.



The New, Light-Weight, Diesel-Powered "Green Diamond," of the Illinois Central, on Exhibition at Pullman

New Streamliner Delivered to Illinois Central

The Green Diamond, comprising five articulated cars built by Pullman, will begin operation between Chicago and St. Louis on May 17

A NEW, light-weight, streamlined, Diesel-powered train was delivered to the Illinois Central at St. Louis, Mo., on March 27, by its builder, the Pullman-Standard Car Manufacturing Company. This train, to be christened "The Green Diamond," is intended for service between Chicago and St. Louis on the Illinois Central, on a contemplated schedule of less than five hours, thus permitting the running of a round trip, or 588 miles, daily. It is expected that the new train will be placed in regular service about the middle of May. While the date of the Green Diamond's installation into regular revenue service and its schedule are still tentative, arrangements have already been made for the crew to operate the train. These men are now undergoing a course of instruction in Diesel operating practices, and will be prepared to handle the train when it is put in service.

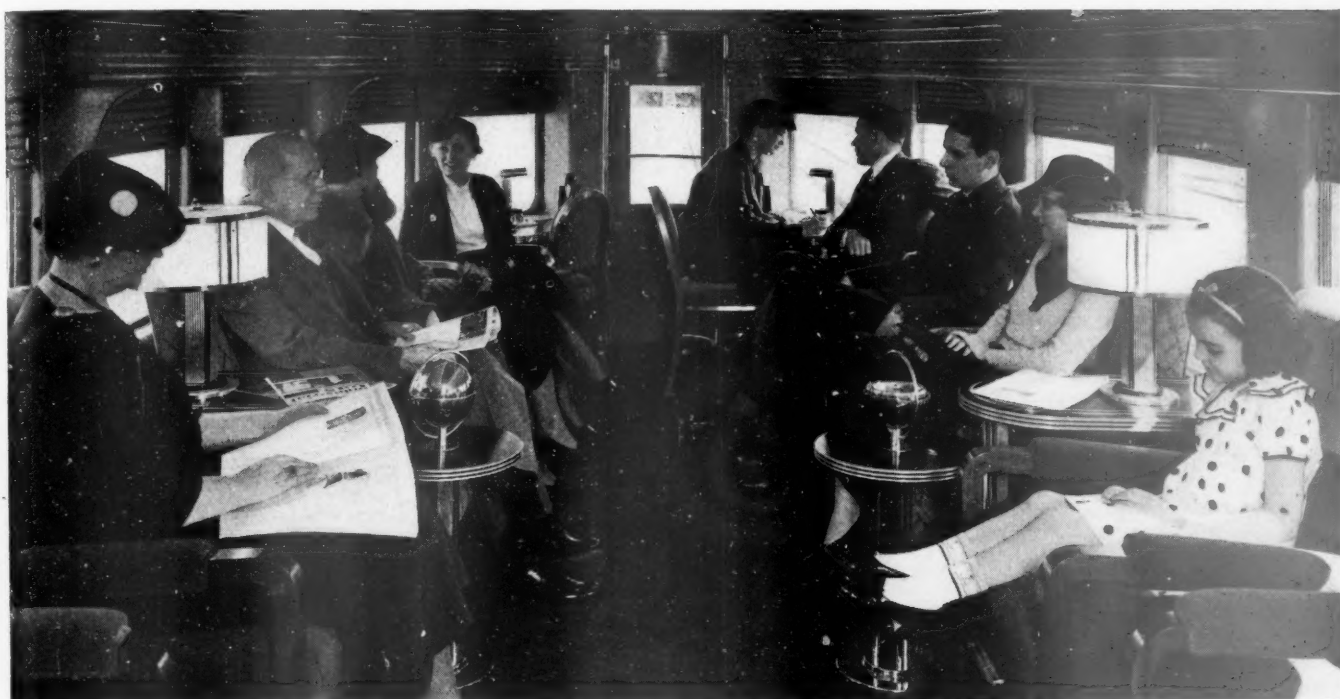
Physical Characteristics

The Green Diamond is a five-unit, roller-bearing train, fully air-conditioned, built of Cor-Ten steel, with aluminum dominating the interior finish. The height of the train is 13 ft. 2 in. from the top of rail to the top of the carlines of the power car over the cab, tapering to 12 ft. 2 in., at the end of the power car; the other cars are 11 ft. 6 in. high. In all other dimensions the Green Diamond corresponds to standard steam train practice. Its weight, however, is only 230 tons, empty, or about half the weight of a standard steam-operated passenger train having the same passenger capacity.

The train cost approximately \$425,000. It is 330 ft. long, and will accommodate 120 passengers in individ-



The Height of the Observation Car Is 11 Ft. 6 In. Above the Tops of the Rails



The Observation-Lounge Is Standard Size, Except for the Tapered End

ual seats. In addition, there are 24 seats at 6 dining tables and 2 seats at desks, or seats for 146 passengers in all. The train will also handle mail, baggage and express.

The Green Diamond is fully articulated and the body units, in order from front to rear, are the power unit, the mail-baggage-express unit, two chair cars and the kitchen-lounge-observation unit.

The power unit contains the main power generating plant, a 1,200-hp. Diesel oil engine built by the Electro-Motive Corporation, and an auxiliary oil engine and generator for supplying the current for train lighting,

battery charging and operating the air-conditioning units and electric kitchen appliances. It also contains air compressors, a heating boiler, batteries and electrical control apparatus, and water and fuel tanks. The engineman's control compartment is situated in the front upper portion of the power unit. In the opinion of the engineers who planned and constructed it, the train will be capable of sustained speeds in excess of 80 miles an hour.

A complete description of the power equipment and accessories, as well as other equipment to be found on the Green Diamond, will appear in the *Railway Age* of April 11.

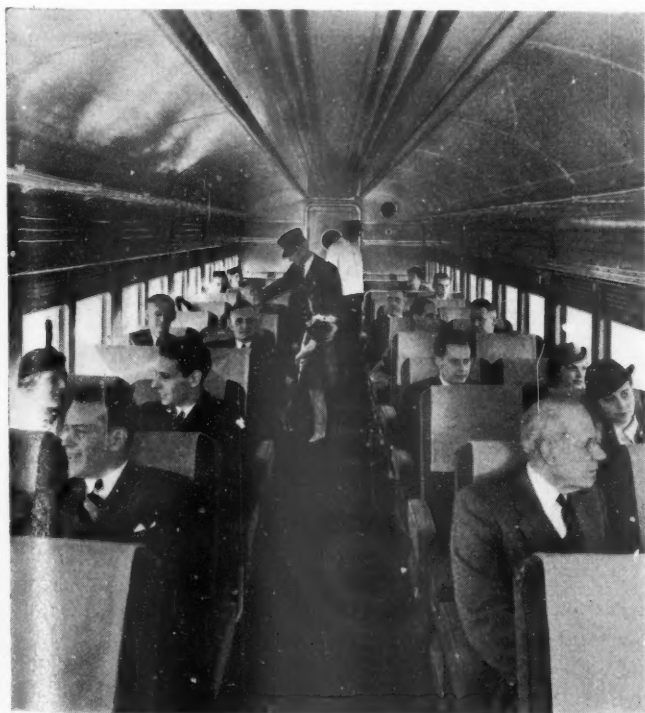
The Passenger Facilities

The first chair car contains 56 passenger seats, the second chair car 44 passenger seats, and there are 16 seats at four dining tables. In addition, the lounge is equipped with 20 portable chairs for regular passenger occupancy, together with 8 seats at 2 dining tables and 2 seats at desks.

The same fuel as that used in the power unit is also burned in the kitchen, which is equipped with numerous electrical devices, and provided with dry-ice refrigeration. While six dining tables are provided at the rear of the second chair car and adjacent to the kitchen in the kitchen-lounge-observation unit, meals will also be served at the regular chair seats anywhere in the train. A folding-stand tray holder, especially designed for this purpose, will receive its first public trial on the Green Diamond.

The chair cars and the observation car have special baggage compartments, so that the passengers need not keep their baggage at their seats, and the porters will collect and return the baggage at the beginning and end of the journey.

The exterior is painted in two tones of green, the tones being separated by red stripes bordered with silver. The lettering is in silver, outlined in red. The interior decoration of the chair cars is in graduated tones of blue, the darkest being near the floor and the lightest on the ceiling. The same plan is used in the



The Interior Decoration of the Chair Cars Is in Graduated Tones of Blue

kitchen-lounge-observation car, except that the dominating color there is green.

Exhibition Tour Planned

No record fast runs are planned for the new train before it is placed in regular service. It was first put on public exhibition at the shops of its builder, the Pullman-Standard Car Manufacturing Company, at Pullman, Ill., on March 18. On the following three or four days, it was operated on short test runs on the Pullman railroad, under the supervision of the builders, and then taken to St. Louis, where formal acceptance of the train by the Illinois Central took place on March 27.

The train was then brought to Chicago, and, after several test runs under the supervision of the Illinois Central, between Chicago and Gilman, 80 miles, it will



There Are Two Dining Tables in the Observation Car, and Four in the Adjacent Chair Car

be taken on a special run to St. Louis and return on March 30, carrying a party of newspaper men and Illinois Central officers.

The entire month of April will be devoted to an exhibition tour, which will comprise some 7,500 miles, taking the train to 11 off-line points, and to 31 Illinois Central cities, covering practically all of the main line and secondary main line points of the Illinois Central, the Yazoo & Mississippi Valley, the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, and ranging from New Orleans to Omaha. The off-line cities to be visited, and at which public exhibitions of the train will take place, include Little Rock, Ark.; Tulsa, Okla., and Oklahoma City; Dallas, Texas; Fort Worth, Waco, Austin, San Antonio and Houston; Detroit, Mich., and Milwaukee, Wis.

At the close of the tour, two round trips between Chicago and St. Louis will be made for the chambers of commerce of each of those cities, and a round trip between Chicago and Springfield will be made for the chamber of commerce of the latter city.

On Sunday, May 17, the train will be formally christened at the Central Station in Chicago, and will go into regular daily revenue service on that day.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 14 totaled 616,862 cars, a decrease of 17,966 cars as compared with the week before, largely caused by the reduction in coal loading, but an increase of 19,431 cars, or 3.3 per cent, as compared with the corresponding week of last year. This was a decrease of 10,687 cars as compared with the loading in the corresponding week of 1934. Miscellaneous freight, live stock, forest products, and ore showed increases as compared with the week before, and all commodity classifications except merchandise and coal showed increases as compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading For Week Ended Saturday, March 14

Districts	1936	1935	1934
Eastern	135,788	135,340	150,845
Allegheny	117,488	120,349	128,236
Pocahontas	46,880	46,974	48,202
Southern	97,393	94,539	96,633
Northwestern	74,100	69,028	69,719
Central Western	92,999	85,070	84,469
Southwestern	52,214	46,131	49,445
Total Western Districts.....	219,313	200,229	203,633
Total All Roads.....	616,862	597,431	627,549
Commodities			
Grain and Grain Products.....	36,928	28,103	31,976
Live Stock	12,222	11,772	14,030
Coal	109,628	131,177	149,487
Coke	7,164	6,249	8,760
Forest Products	30,965	25,347	25,290
Ore	6,984	4,513	4,010
Merchandise L.C.L.	158,046	159,652	166,193
Miscellaneous	254,925	230,618	227,803
March 14.....	616,862	597,431	627,549
March 7.....	634,828	587,190	614,120
February 29, 1936.....	673,123	604,331	605,717
February 22.....	586,712	553,165	574,908
February 15.....	631,347	581,669	600,268
Cumulative Total, 11 Weeks.....	6,739,919	6,281,220	6,344,942

The freight car surplus for the last half of February averaged 170,620 cars, a decrease of 25,219 cars as compared with the number for the first half of the month. The total included 103,382 box cars, 22,492 coal cars, 26,064 stock cars, and 8,510 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended March 14 totaled 43,823 cars, as against 43,358 in 1935 and 45,410 cars in the previous week, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
March 14, 1936.....	43,823	23,469
March 7, 1936.....	45,410	24,900
February 29, 1936.....	45,263	24,730
March 16, 1935.....	43,358	23,872
Cumulative Totals for Canada:		
March 14, 1936.....	456,150	247,967
March 16, 1935.....	468,332	248,466
March 17, 1934.....	449,327	248,443

EXPERIMENTS TO DETERMINE THE FEASIBILITY of showing sound motion pictures on trains are being conducted on the Union Pacific and the Chicago, Burlington & Quincy. On the Union Pacific, a feature picture, a short comedy and an educational subject were shown on the Columbine after the dinner hour on March 20, while on the Ar-Sar-Ben of the Burlington the pictures were projected in the dining car on the westbound trip March 24. The pictures are on 16 millimeter films and are projected by a portable machine furnished by Films, Inc.

The Government and Transport*

Difficulties and dangers of regulation not quite
what many conceive them to be

By Joseph B. Eastman

Federal Co-Ordinator of Transportation

FASCINATING and inspiring as is the history of transportation in the United States, we are in the midst of a development which can easily surpass what has gone before, and very quickly as the world goes. We may look to the air for the most spectacular phases of this development, but every form of mechanical transportation, young or old, can have its share.

Some will say that the best thing that the government can do is to keep its hands off, but those who stop to think will not say that. No government has ever kept its hands off of transportation, and no one actually wants any such thing.

Some may say that government help is all right, but not government regulation. I hardly think they will stand by that proposition, if they have given any time to transportation history. The sound, seasoned, sober thought, not only of the nation but of the world, concedes the need for regulation. The only real question is as to the kind, quality, and extent.

For a little more than 21 years I have seen regulation from the inside. Granting that the outside view may be better for some purposes, it seldom penetrates very deeply below the surface. There are difficulties and dangers in regulation, but they are not, I believe, quite what many conceive them to be.

Does Regulation Crush Initiative?

It is a common idea that regulation is apt to impair initiative and enterprise. There is that danger, but it does not arise in just the way that it is supposed to arise. Take the railroads. Many think that their initiative and enterprise have been choked by restrictions that tie their hands and entangle them at every turn in coils of government red tape. I tried to find out about that by asking the railroads themselves to tell me from what restrictions they wish relief.

The striking thing about their response was that they asked for so little. Their proposals left untouched most of the vital parts of the present scheme of regulation. They asked for no relief from the control over security issues, over the construction of new lines, and the abandonment of old lines, over consolidations and the like, or over service, accounting, and most of the safety matters. What they did ask had to do largely with the regulation of rates, and most of it was conditional. They wanted the rates of competing forms of transportation regulated or, in the alternative, relief from some phases of their own regulation.

If you will go to the record, you will not find that any governmental body has undertaken to prevent the railroads from improving their motive power, cars, tracks, stations, shops, or any other facilities, or from changing their methods of management and operation or from giving better service to the public. Recently we have seen very striking improvements in passenger mo-

tive power and equipment, illustrated by the Diesel-electric, air-conditioned, streamlined trains. No public regulation stood in the way of these improvements, or would have stood in the way if they had been attempted years ago. Many of them were in fact made with government money, loaned on very favorable terms. Even when it comes to rates, the Interstate Commerce Commission has been so ready to permit changes in rates to meet the new competitive conditions that the motor carriers and the water carriers and their friends have broadcast the slogan that the commission is "railroad-minded."

Where the Real Danger of Regulation Lies

I do not for a moment say that regulation has been perfect, in respect either to the law or to its administration. On the contrary I am sure that both can be improved. I do say that public regulation has not, in any such way as many think, prevented the free and untrammelled exercise by the railroads of initiative and enterprise. And yet, while I say this, I am inclined to think that it has had an adverse effect on initiative and enterprise, not direct but indirect, and operating in a very different way from what is so often assumed.

A very real danger in public regulation is that those who are regulated may come to rely upon it too much and to attribute to it powers which it does not possess. One way of curing a reduction of earnings is to increase rates. Other ways are to attract more business by better service or lower rates, or to reduce expense. Ordinary competitive industries look first to these other ways, for as a rule they can do nothing else. An industry under the shelter of regulation, however, is apt to look first to increases in rates, and it is in danger of becoming so engrossed with that particular method of meeting financial difficulties that it will overlook and neglect the other methods. Not only that, but the managements are tempted to shift responsibility to the commission and hold it guilty of all their troubles, if it does not accede in every respect to their rate demands.

Do not misunderstand me on this point. Rate increases may be very proper and right, but they are subject, like everything else, to the influence of economic conditions, and there are decided limitations to their efficacy as a means of improving net earnings, even in the case of an industry which has a complete monopoly. As never before, progress for the railroads now lies in the direction of better service at lower rates, wherever such changes may in any way be feasible and economically sound. This, I think, the managements are fast coming to realize. In other words, whatever threat public regulation may in the past have offered to initiative and enterprise is now in the way of being overcome by the force of new conditions which it is impossible to escape.

This brings me to our new undertaking in regulation, namely, the regulation of motor carriers. First and

*From an address before the Transportation Conference at Detroit, Mich., on March 19, 1936.

foremost, we do not regard it as a means of protecting any other form of transportation. It may operate that way incidentally, to some extent, but the real purpose is to improve conditions in the motor carrier industry and prevent abuses which, in the absence of public control, may weaken and demoralize that industry itself.

Motor Carrier Regulation

In the second place, we realize that we are confronted in the regulation of motor carriers with an undertaking of great practical difficulties, particularly because of the vast number of very small operators. In a multitude of ways the problem is very different from that of railroad regulation.

Because of the practical difficulties it is also our purpose to proceed gradually and build up from minimum requirements, instead of attempting any full-blown system of regulation at the outset. In other words, we intend to feel our way along and be sure that we are on sound ground before we go ahead, keeping in mind always the small operator and the troubles which he will have in adjusting himself to any elaborate requirements.

The motor carrier act bristles, as does every new act of any complexity, with legal questions. The same thing happened in railroad regulation, as the law books amply testify, but in the case of the railroads regulation was developed over a long period of years. With the motor carriers we are getting these legal questions all in one dose. They ought not to be dealt with summarily or without giving all who are directly concerned full opportunity to be heard or without adequate knowledge of the underlying facts which may be of controlling importance.

Water Transport Regulation

The same body which regulates railroads and motor carriers ought, in my judgment, to regulate water carriers as well. The thing to be regulated is transportation, and not some particular part of it. The various forms of transportation are interlocked and interrelated in many ways and if we are to deal fairly and impartially and consistently with them all, the way to do it is plainly to concentrate responsibility in a single body which will play no favorites.

The thing to regulate and protect is the common carriage by water upon which the general public must depend for water transportation. I see no occasion to regulate contract or private carriers, except to the extent that they may see fit to trespass on the common carriers and deal unfairly with them. The bill for the regulation of water carriers which is now pending in the Senate is governed by that principle.

There is a need for regulation within the industry, because of the demoralization to which destructive competition by the water carriers themselves has so often led, but there is an even greater need because of the situation with respect to railroad competition. The railroads chafe under the fact that their own rates are subject to comprehensive regulation, while most of their water competitors are free to do as they please with their port-to-port rates. This unbalanced situation is bound, sooner or later, to reach equilibrium, and the place of rest will either be regulation for both or regulation for neither.

Let me say that the bill proposed makes it clear that water carriers are to be regulated from the standpoint of water transportation conditions and not the conditions which prevail in some other form of transportation. The "inherent advantages" of water transportation are to be recognized and preserved. There is no intent that

water carriers shall in any way be compelled to charge rates which exceed those which can be justified by their own service costs.

The Need for Collective Research

Those of you who can find an opportunity will, I hope, read the address recently made by Dr. C. M. A. Stine, of the Du Pont Company and entitled "Change Rules the Rails." This address deals with a subject in which I have been deeply interested for a long time, namely, the opportunities for centralized scientific, engineering, and economic research by the railroads collectively, of the character carried on with great success by various other large industries. The point is that with the great development of other forms of transportation, which shows no signs of stopping but on the contrary is accelerating, the railroads must join the procession and march in the direction of better service and lower costs. To do this to the best advantage they must utilize, as other industries have done, all the facilities of modern research, and organize so that this work can be carried on collectively as effectively and efficiently and economically as possible.

Furthermore, this venture in co-operation which Dr. Stine recommends and which I so heartily endorse, is one out of many ways of co-operative activity which the railroads can pursue with great benefit to themselves, to their employees, and to the public which they serve. I do not refer to any co-operation which will in any way eliminate competition of railroads with each other or destroy the independence of their managements. All that is proposed is that where the railroads have interests in common and can by co-ordination or collective action carry on certain work or certain operations more efficiently and economically in that manner than if they all go their several ways, they get together and proceed accordingly.

Maintenance of Wasteful Labor a "Losing Game"

The object is not to deprive men of work or to resuscitate inflated securities but to pave the way for the development of which the railroad industry is capable and which it must have if it is to keep up with the transportation procession. The way to make work for railroad employees is not to provide or maintain labor opportunities which are wasteful and unnecessary, for in the long run, and not so very long either, that is a losing game. The better way, and in fact the only effective way, is to do everything possible to enable the industry to attract the business which it is potentially best fitted to handle, through better service and lower rates.

The government of which I am a very small part has no desire other than to help make the conditions as favorable as possible for the great development of transportation which is already in progress. It hopes to do this by curbing abuses, and promoting good order, stability, and financial responsibility. It has no desire to persecute or hurt any form of transportation or to set any limits to initiative and enterprise. It believes that the possibilities are great which the future holds forth for each and every means of transportation, and it wishes to make it easier for them to realize these possibilities.

THE "FLORIDA SUNBEAM" has been doing "an exceptional business" since it began daily service to Florida on January 1, from Chicago, Detroit, Mich., and Cleveland, Ohio, says a recent statement from the passenger traffic department of the Southern which participates with the New York Central and the Seaboard Air Line in the operation of the train.



Boston & Maine Diesel-Electric Rail Car No. 1140 at North Station, Boston, Mass.

Boston & Maine Rail Car

Ingersoll-Rand-General Electric engine-generator sets provide
800 hp. for hauling standard passenger trains

THE Boston & Maine placed in service, in August, 1935, two Diesel-powered rail cars to be used as power units for the handling of standard passenger coaches and Pullman cars on existing steam train schedules. These power units have compartments for mail and baggage, in addition to the space occupied by the power plant. One of these two cars was described in the *Railway Age* of November 16, 1935, and this article covers the description of the other car, which is equipped with two 400-hp. Ingersoll-Rand Diesel engines and General Electric electrical equipment.

The principal dimensions of the car are as follows:

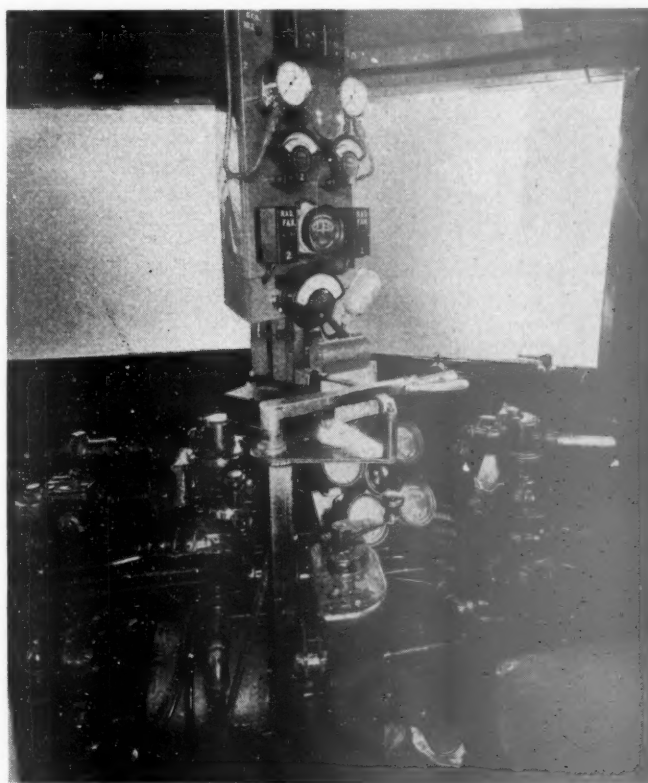
Length over body.....	78 ft. 0 in.
Truck center distance.....	56 ft. 4 in.
Truck wheel centers, six-wheel truck.....	5 ft. 6 in.
Truck wheel centers, four-wheel truck.....	8 ft. 0 in.
Diameter of wheels, both trucks.....	36 in.
Length of engine room.....	25 ft. 0 in.
Length of mail compartment.....	15 ft. 1 in.
Length of baggage and boiler compartment.....	37 ft. 11 in.
Height over engine-room roof above the rail.....	14 ft. 6½ in.
Height over baggage compartment.....	12 ft. 11½ in.
Width over sills.....	9 ft. 9¾ in.
Width overall.....	10 ft. 6½ in.
Car speed, max.....	80 m.p.h.
Motor gear ratio.....	55 to 18
Tractive force, continuous at 24.3 m.p.h.....	10,200 lb.

The front end of the car is mounted on a six-wheel truck, while the rear end is carried by a four-wheel truck. Two of the axles of the front truck and both axles of the rear truck are motor driven. The total weight of the car in working order, including fuel, supplies, 22,000 lb. of baggage and 5,000 lb. of mail is 248,000 lb. This weight is evenly distributed over all five axles.

Car Body and Trucks

The car body and trucks were furnished by the St. Louis Car Company and the General Steel Castings Corporation. The underframe is of welded construction with center sills composed of two 9-in. 25.4-lb. ship

channels and 18-in. cover plates. The draft sills are constructed by welding ½-in. plates 16 in. deep to the inside of the center-sill channels. The bottoms of the 16-in. plates are flanged out 2¾ in. The front and rear bolsters and needle beams are fabricated from steel plates



The Arrangement of the Controls at the Operator's Station

cut to shape and welded together to form box girders and I-sections, respectively. The cross-bearers are $\frac{3}{16}$ -in. channel pressings, welded to the center and side sills along all contact edges. Man-Ten steel is used throughout the underframe.

The engine-room floor plate is welded to the center sills, side sills, bumper face plate, front bolster and the webs of the needle beams to form an integral oil-tight frame from the bumper to the rear end of the engine room. The engine room roof is designed to accommodate cooling radiators, intake silencers, air strainers and exhaust stacks. That portion of the roof over the power plant, is removable from side plate to side plate in order to provide accessibility to the power plant.

A Vapor Car Heating Company's oil-fired boiler, automatically controlled, having a capacity of 1,000 lb. of steam per hour, is located at the rear end of the baggage compartment. A water tank of 6,000 lb. capacity, filled through the car roof from standard filling plugs, is mounted opposite the boiler in the baggage compartment.

The trucks have integral cast-steel frames with rolled-steel wheels and Timken bearings on 6-in. by 11-in. journals. The brakes are of the clasp type operated by 14-in. by 10-in. cylinders, mounted one on each truck.

Power Plant and Electrical Equipment

This car is powered by two Ingersoll-Rand four-cycle oil engines. The engines have six 10-in. by 12-in. cylinders arranged in line and each develops 400 hp. at 700 r.p.m. The weight of each engine is approximately 13,000 lb. Each engine drives a General Electric GT-538 generator set, consisting of a main generator, direct-connected auxiliary generator and belted split-pole exciter. There are four GE-721B traction motors, each engine-generator set driving its own pair of traction motors independently. Each power plant also drives independently one General Electric 1124, 10-hp., 1,750-r.p.m. radiator blower motor and a 35-cu. ft. air compressor. The control is type P electro-pneumatic, providing traction-motor combinations of series, parallel full field and parallel reduced field.

The GT-538 generator has a characteristic which provides full engine utilization up to 60 m.p.h., with approximately 90 per cent utilization at 80 m.p.h. The main generator field is excited from the belted split-pole exciter mounted over the auxiliary generator. To keep the main generator output constant regardless of

the temperature of the main generator or exciter fields, the exciter is provided with a temperature-compensating relay which varies resistance in series with the exciter field.

The direct-connected auxiliary generator provides approximately 112 volts at all engine speeds from idling to full speed for the operation of auxiliaries, control and charging the Exide 48-cell, MVAH-15 battery. The control is arranged so that the battery may be charged from either auxiliary generator.

The motor equipment is designed for a maximum speed of 80 m.p.h., with 55 to 18 gearing and 36-in. wheels. The motors are self-ventilated, the continuous rating of the car being 10,200 lb. tractive force at 24.3 m.p.h.

The car is equipped with a single control station for one-man operation. The control equipment is arranged to provide automatic transfer from series to parallel full field, and from parallel full field to parallel reduced field. As each power plant has its own transmission, consisting of traction generator, two traction motors and the relating control, the transfer of motor combinations does not occur on each power plant at the same instant. This results in an exceptionally smooth transition, since full power is on one power plant while the other is transferring; also, since each engine has its individual transmission, one engine may be shut down and the car operated on the remaining engine without affecting the characteristic with respect to full utilization speed.

Annual Report of Pullman Incorporated

THE annual report of Pullman Incorporated for 1935, shows a net loss of \$273,727, as compared with earnings of \$2,057,669 in 1934. After absorbing the operating loss, providing for dividends paid and for additions to equipment and property, the consolidated working capital on December 31, 1935, amounted to \$49,214,130, as compared with \$58,962,479 at the end of the previous year. Current assets at the end of the year totaled \$60,410,928 and current liabilities \$11,196,798, as compared with \$69,474,997 and \$10,512,518, respectively in 1934. Investments over the last three years

Traffic and Operating Statistics

Comparative Statement For Years Ended December 31

Item	1931	1932	1933	1934	1935
Cars owned	9,483	9,279	8,478	8,473	8,027
Cars operated	7,402	5,693	4,944	5,029	5,057
Car miles	1,025,164,501	799,484,608	710,747,267	737,167,857	758,554,032
Revenue passengers:					
Berth	14,583,183	10,185,444	9,248,461	10,258,642	10,624,818
Seat	8,401,738	5,564,063	4,468,077	4,846,707	4,853,890
Total	22,984,921	15,749,507	13,716,538	15,105,349	15,478,708
Revenue passenger miles	9,891,910,222	6,757,760,858	6,141,986,577	6,891,002,293	7,146,269,648
Revenue from cars	\$63,683,507	\$44,196,043	\$39,316,239	\$44,523,817	\$46,758,260
Average per car	\$8,603.44	\$7,763.50	\$7,952.31	\$8,853.77	\$9,246.43
Expenses	\$60,773,171	\$45,416,077	\$39,880,665	\$44,124,174	\$48,405,241
Average per car	\$8,210.37	\$7,977.53	\$8,066.48	\$8,774.29†	\$9,572.12†
Net earning from cars	\$2,910,336‡	\$1,220,034*	\$564,426*	\$399,643‡	\$1,646,981*
Traffic averages:					
Average revenue per passenger	\$2.77	\$2.81	\$2.87	\$2.95	\$3.02
Average net earning per passenger	\$0.13	\$0.08*	\$0.04*	\$0.03	\$0.11*
Average net earning per car per day	\$1.08	\$0.59*	\$0.31*	\$0.22	\$0.89*
Average mileage per car operated	138,496	140,438	143,760	146,589	150,004
Average journey per passenger (miles)	430	429	448	456	462
Average miles per car per day	379	384	394	402	411
Average loading per car (passengers)	9.65	8.45	8.64	9.35	9.42

* Denotes loss.

† Includes Pullman proportion of expense of operation of air conditioning equipment.

‡ After provision for Federal Income Tax.

of approximately \$21,500,000 in air-conditioning installations are being amortized on a basis that will return most of this investment during the next five years, with corresponding strengthening of the current asset position.

The outstanding features of 1935 operations in the major lines of business activity were:

(a) A loss of \$1,646,980 in sleeping car business, notwithstanding an expansion of \$2,234,443 in gross revenue, as contrasted with earnings of \$597,356 in 1934. This loss is due to a considerably enlarged scale of ordinary maintenance expenditure, to special maintenance charges arising in connection with the 1935 air-conditioning program and to increased payroll costs resulting from complete restoration of the pre-1932 wage level for all rail carrier employees.

(b) Earnings for \$228,717 in the manufacturing business, as compared with earnings of \$1,292,591 in 1934, when under the stimulus of large-scale Government loans to the railroads substantially larger new car orders were placed than in 1935.

(c) Contraction of \$386,527 in earnings from security investments reflect some decline in interest rates but principally the absence of interest on securities that were sold or collected at maturity during the year and the proceeds used to finance additions to equipment and property.

While gross revenue from sleeping car business of \$46,758,260 represented a recovery of 18.9 per cent from the depression-low of 1933, it was nevertheless equivalent to only 57 per cent of the pre-depression (1925-9) average. With substantially the same burden of property depreciation to be carried as during periods of normal gross revenue and with the impracticability of reducing property maintenance and a country-wide operating organization in direct ratio with the shrinkage in volume of traffic, it was not possible to maintain a normal ratio of earnings with a 57 per cent load factor.

Additions to Property and Equipment Account during 1935 were as follows:

Air conditioning apparatus in cars.....	\$11,337,978
Routine additions and betterments to cars.....	44,765
New and rebuilt cars.....	1,160,500
Improvements at laundries, shops, district offices, etc.....	587,574
Improvements at manufacturing plants.....	151,467
	<hr/>
	\$13,282,284
Less: Retirements of cars and other property.....	10,813,683
	<hr/>
Net addition	\$2,468,601

During 1935 there were installed 38 general service cars, new and rebuilt, and 484 cars of obsolete types were retired, leaving a total of 8,027 cars of all classes on the equipment list at the close of the year.

The \$10,813,683 of retirements during the year consisted largely of obsolete types of general service cars—either rebuilt, revalued and reinstalled in the equipment list or scrapped. In addition, the carbuilding plant at Sagamore, Mass., which has not been in operation for many years, was sold to the United States Government in connection with the widening of the Cape Cod canal.

At the close of the year there were available to the traveling public 3,238 air-conditioned Pullman cars, out of 5,875 air-conditioned passenger cars of all ownerships on the railroads of this country. Under present plans 700 additional Pullman cars will be equipped with air conditioning apparatus by the opening of the 1936 summer travel period.

Several trains of new light weight Pullman sleeping cars, in various kinds of basic materials and of various forms of streamlined articulated design, have been built or are under way for inclusion in new-type high-speed

trains that the railroads will have in regular operation in the near future.

The consolidated income account as of December 31, 1935, as compared with 1934 follows:

	1935	1934
Earnings:		
From sleeping car business of the Pullman Company, after deducting all expenses incident to operations.....	\$8,906,047†	\$9,808,157
Less: Charges and allowances for depreciation..	10,553,027	9,210,802
	<hr/>	<hr/>
	\$1,646,980*	\$597,355
From all manufacturing business, Pullman Railroad, and other miscellaneous properties, after deducting expenses incident to operations....	\$2,866,583	\$4,075,030
Less: Charges and allowances for depreciation..	2,637,866	2,782,439
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	\$228,717	\$1,292,591
From security investments, etc., less administration expense of Pullman Incorporated.....	\$1,348,102	\$1,734,630
Total earnings from all sources.....	\$70,161*	\$3,624,576
Less: Provision for Federal income tax.....	203,566	666,907
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Balance carried to surplus.....	\$273,727*	\$2,957,669

* Denotes deficit.

† Note.—The Railroad Retirement Act of 1934 was declared unconstitutional in 1935. The charges therefor (\$378,935) made in 1934 as part of the expense of operation have now been reversed and credit of that amount taken as reduction of expense of operation in 1935, in necessary conformity with Interstate Commerce Commission accounting rules.

Long-Short Haul Repeal Bill Passed by House

WASHINGTON, D. C.

THE Pettengill bill, H. R. 3263, to repeal the long-and-short-haul clause of paragraph 1, section 4 of the interstate commerce act, a center of controversy for half a century, was passed by the House on March 24 by a standing vote of 215 to 41 in the form in which it was reported by the House committee on interstate and foreign commerce last year after extensive hearings. The bill now goes to the Senate, where it is liable to face some determined opposition, including that of Senator Wheeler, chairman of the committee on interstate commerce, but its proponents are hopeful that it may be passed unless there is an early adjournment of Congress. At the recent hearing before the House rules committee Representative Pettengill said he had been informed that some 56 votes for the bill were assured in the Senate. The bill had not been introduced on the Senate side.

The bill as passed omits from section 4 entirely the prohibition against a greater charge for transportation by railroad for a shorter than for a longer distance over the same line or route in the same direction, the shorter being included within the longer distance, except upon special authorization by the Interstate Commerce Commission, leaving only a declaration making it unlawful "to charge or receive any greater compensation as a through rate than the aggregate of the intermediate rates subject of the provisions of this act." There are provisos, however, that the commission may from time to time prescribe the extent to which carriers may be relieved from the operation of the section; that rates existing at the time of the passage of the amendatory act by virtue of orders of the commission or as to which application has not yet been acted upon shall not be required to be changed until the further order of or a determination by the commission; and further "that in any case before the commission where there is brought in issue a lower rate or charge for the transportation of like kind of property for a longer than for a shorter distance over the same line or route in the same direction, the shorter being included within the longer distance,

the burden of proof shall be upon the carrier to justify the rate or charge for the longer distance against any claim of a violation of sections 1, 2 and 3 of the interstate commerce act."

The effect of the change would not be to give the railroads complete freedom to reduce long-haul rates without making corresponding reductions at intermediate points, because the commission would still have control of the rates under sections 1, 2 and 3 of the act and could suspend or require changes in any rates proposed by the railroads in accordance with its usual procedure, but the Pettengill amendment, if enacted, would remove a special presumption of undue discrimination and make it possible for rates of the kind heretofore covered by the long-and-short-haul clause to become effective in the normal way if not suspended.

While the primary purpose of the amendment is to remove a restriction which had handicapped the railroads in meeting the competition of water and highway carriers not so restricted, another object has been to remove a rigid rule that has greatly complicated all comprehensive rate adjustments. The bill was proposed by the National Industrial Traffic League but has been actively supported by the railroads, particularly the western transcontinental lines, and the railroad labor organizations, whose work has been especially effective in interesting Congress in the subject at this time over the vigorous opposition of many groups of shippers and sections of the country. It was opposed by a majority of the Interstate Commerce Commission and by Co-ordinator Eastman, although they had favored some modification of section 4.

Debate on the bill was begun in the House on March 20 and a rule proposed by the rules committee after a hearing earlier in the month, providing for five hours of general debate, was adopted by a vote of 155 to 30. Consideration of the bill was not completed on that day however, but was postponed until Tuesday. The bill was vigorously opposed by representatives of the water carriers and by the American Trucking Associations, Inc., which sent a letter to members of Congress taking the position that it would defeat the policy set forth in the motor carrier act and "would give the railroads free rein to set up a destructive rate war which the motor carriers would be helpless to combat."

An active fight against the bill was also led during the debate by Representative Bland, of Virginia, chairman of the House committee on merchant marine and fisheries. He offered a series of amendments which were defeated, and, just before the final vote, offered one that "this act shall be known as an act to destroy the American merchant marine and all water-borne commerce in the United States, and to increase rates, fares, and charges throughout the United States." He had also sought to forestall the bill by calling a hearing on the Eastman bill to regulate water carriers but no action on that bill was taken by the merchant marine committee.

Members of Congress during the debate seemed particularly impressed by the argument that it is unfair to continue to restrict the railroads by the special application of the long-and-short-haul rule to them when it is not applied to their water and motor competitors that have been able to take much traffic away from the railroads because of their freedom in rate-making, although some said they would prefer to have all forms of transportation placed under comparable regulation. Representatives of middle western states desired to have the railroads given greater opportunity to make rates in competition with those available to eastern shippers via the Panama canal. A large number, however, indicated that they have been influenced by representatives of the

railroad employees who look for greater employment opportunities if the railroads are given greater freedom to meet competition, although some opponents of the bill contended that the railroads will handle the increased traffic without much increase in the number of trains or employees and that any increase in railroad employment would be at the expense of labor employed by water or motor carriers.

Representative Pettengill, who introduced the bill and has piloted it through the House, said that it was "essentially a shippers' bill, and not a railroad bill", that it originated as a shippers' bill, having been written and first sponsored by the National Industrial Traffic League, whose members were interested in reducing distribution costs, broadening markets, and quickening service. "Let us get this point straight," he said. "Practically every petition for relief against the long-and-short-haul clause as now written, filed with the Interstate Commerce Commission, is filed only because some shipper asks the railroads how he can move goods into a market foreclosed to him by transportation costs. Those occasions arise only when competitive conditions exist at the point of destination which make it necessary, in the interests of shippers and buyers, to do so. Otherwise, speaking broadly, freight rates ought to be in rough proportion to length of movement. But in quoting less for the long haul than for the short haul, when that is necessary, railroads do only what practically every producer does. Few people do all their business on the same margin of profit. They sell first where they can sell to the best advantage and then they sell their surplus for whatever they can get for it, provided it yields some profit, however small. Railroads sell surplus transportation in the same way that producers sell surplus goods. The bill in its long-run effect cannot but tend to reduce freight rates generally and thus benefit 125,000,000 people by bringing the power to consume into better balance with our power to produce, which is our prime problem."

There was no record of the votes on final passage of the bill. Speeches in favor of it were made by Representatives Greenwood, Indiana; Harlan, Ohio; Halleck, Indiana; Pettengill, Indiana; Cooper, Ohio; Christianson, Minnesota; Maas, Minnesota; Houston, Kansas; Martin, Colorado; Dockweiler, California; Griswold, Indiana; Wolverton, New Jersey; Lucas, Illinois; Reece, Tennessee; Fiesinger, Ohio, and Knutson, Minnesota. Speeches in opposition to the bill were made by Representatives Lehlbach, New Jersey; Cox, Georgia; Driver, Arkansas; Bland, Virginia; Withrow, Wisconsin; Scrugham, Nevada; Hill, Washington; Hope, Kansas; White, Idaho; Culkin, New York; Colden, California; Costello, California; Gearhart, California; Pierce, Oregon; Holmes, Massachusetts; Chapman, Kentucky, and Utterback, Iowa.

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A New Diesel-Powered Road-Rail Car Recently Tested on the Great Western of England. It was Stated That the Vehicle Could Pull Ten Freight Cars or Ten Trailers

Railroads Resuming Normal Services After Disastrous Floods

Main lines through affected areas in Middle Atlantic States re-opened last week-end—Resumption in New England proceeds

RAILROAD main lines through the flood-stricken Middle Atlantic states were virtually all reopened for normal routing and schedules by the first of this week. In New England, where the more serious damage came later, the reopening of affected lines was expected to be complete by the end of the week. Complete rehabilitation will however require several weeks and cost millions of dollars. Estimates of the loss to the more seriously affected roads are as yet unavailable.

The floods generally are characterized as the "worst on record" in the areas affected. They were particularly disastrous in Western Pennsylvania around Pittsburgh, and extending east as far as Lancaster; around Cumberland, Md., Wheeling, W. Va., and Harpers Ferry; and in New England, especially along the Connecticut river from Springfield, Mass., to Hartford, Conn., and in Maine. Less seriously affected were up-state communities in New York and parts of New Jersey.

Through service on the Pennsylvania in the most seriously affected area between Harrisburg, Pa., and Pittsburgh was resumed at 12:01 p.m. on March 21. It had been suspended since March 17 at 6:30 p.m. Meanwhile a limited number of P.R.R. passenger trains, unable to follow normal detour routes because of flood conditions, was detoured over railroads north and south of the Pennsylvania lines.

All points in this area experienced record-breaking high water conditions except Johnstown, Pa., where the flood of 1889 remains the record by several feet. About 500 mi. of P.R.R. line were under water sufficiently deep to halt train operations. Approximately 2,500 poles carrying communication and power lines were destroyed while an additional 11,000 were damaged sufficiently to require attention. Also, inspection and repairs will be required on power plant and shop machinery, signaling facilities, passenger and freight stations and rolling stock, including 110 passenger cars, several thousand freight cars and 97 locomotives.

In addition to the foregoing much freight matter was damaged by water. Estimates of the monetary loss are as yet unavailable.

Through service on the Baltimore & Ohio was first established without any detours on Sunday, March 22, with the arrival at Washington, D. C., at 11 a. m. of train No. 10 from Chicago. The first through train westbound was No. 15 which left Washington for Chicago at 1:20 p. m. the same day. By the night of March 23 the B. & O. had "double track or better" in operation at all points between Washington and Chicago except over the main line bridge at Cook's Mills, Pa., where a single track was in service.

The B. & O. experienced its first flood trouble on March 17 with high water from Will's Creek and a washout of the approach to the 30-ft. span bridge at Cook's Mills, 9 mi. west of Cumberland, Md. This necessitated the detouring of two Chicago trains on that

night. Because of flood conditions on the Western Maryland also, it was planned to detour via Pennsylvania from Martinsburg, W. Va., to Homestead, Pa., 7 mi. east of Pittsburgh. However, conditions compelled rerouting over the Elmira division to the Pennsylvania from Harrisburg, Pa., to connect with the Erie at Elmira, N. Y. Conditions again forced a change of this plan and trains were returned to Harrisburg and thence to Wilkes-Barre, Pa., from which point the Lehigh Valley and Erie were used to Sterling, Ohio, 26 mi. west of Akron, where connection was made with the main line of the B. & O. to Chicago.

Also, on March 17 a washout on the St. Louis line at Piedmont, W. Va., 28 mi. west of Cumberland, required the rerouting of St. Louis trains from Washington, D. C., via the Southern to Charlottesville, Va., and the Chesapeake & Ohio to Cincinnati, Ohio, joining at this point the main line of the B. & O. Beginning March 18 this detour via the Southern and C. & O. to Cincinnati was used for all through trains, the Chicago trains using the B. & O. Toledo division from Cincinnati to Deshler, Ohio, and thence to Chicago, and the St. Louis trains continuing their regular route westward from Cincinnati.

The flood conditions grew progressively worse, with Will's Creek flooding the Cumberland area on March 18 and the Potomac river overflowing east of Cumberland on the following day, principally between Cumberland, Md., and Harper's Ferry, W. Va. Similar floods occurred in the Pittsburgh district with the overflowing of the Allegheny and Monongahela rivers. On March 19 through trains for Chicago discontinued using the detour route via the Southern and C. & O. to Cincinnati, and were routed from Washington to Weverton, Md., 93 mi. east of Cumberland, thence via the Washington branch of the B. & O. to Hagerstown, Md., continuing over the Western Maryland to a connection with the main line of the B. & O., 35 mi. west of Cumberland. Conditions on the Western Maryland westward from Hagerstown, however, caused the change in this plan and trains were then rerouted via the Western Maryland from Hagerstown to Shippensburg, Pa., thence to Allentown, Pa., via the Reading, to Buffalo over the Lehigh Valley, and on to Chicago via the New York Central. Meanwhile the St. Louis trains still continued operating via the southern detour route to Cincinnati.

The damaged bridge at Cook's Mills was repaired and available for use on the afternoon of March 19. That night main lines were restored to operation from the eastern slope of the Alleghenies just west of Cumberland, through Pittsburgh to Akron, Cleveland, Toledo, Detroit and Chicago, and normal facilities there were intact. Complete facilities were also opened from Cumberland through Parkersburg, W. Va., and Cincinnati to Louisville, and St. Louis.

The B. & O. is unable to estimate the financial loss at this time, but did say that "While the damage has been

extensive, the losses have not been as severe as might have been anticipated in view of the extent and magnitude of the flood conditions." None of the bridges on the main line was lost, and only one short bridge was damaged and has since been repaired.

The only difficulty experienced by the New York Central was that from the ice blocks on its tracks at Schodack Landing, near Albany, N. Y., and high water which brought a precautionary slowing down of operations, as reported in last week's issue. These situations had all been cleared up by the end of last week. During the period of the floods the N. Y. C. detoured several Pennsylvania trains. Likewise the Delaware, Lackawanna & Western reported no serious damage. It did however encounter high water near Delaware Water Gap, Pa., and its Bloomsburg branch, extending from Scranton, Pa., to Northumberland was tied up for three days, also from high water.

The Erie reports that service on its main line was maintained during the entire period of the floods by using one track or the other when the track in either direction was under high water; no bridges were lost. This road did, however, experience some difficulty at Tioga Centre, N. Y., Waverly, Johnson City, and Great Bend, where there were interruptions of from 4 to 6 hr. on one track or other, due to landslides and washouts on the Delaware division. Also, high water was encountered on branch lines of the Tioga division in Pennsylvania as well as on the New York, Susquehanna & Western in the anthracite territory.

Service on the Lehigh Valley between Wilkes-Barre and Sayre, Pa., was interrupted on the afternoon of March 18, when water from the Susquehanna river rose rapidly, covering the tracks in several places, particularly Bosberg tunnel, west of Tunkhannock, Pa. Tracks were restored to service at 9 a. m. on March 20. There was no damage to any bridges or other structures and the physical damage generally was comparatively small.

The Monticello branch of the New York, Ontario & Western was tied up for three days, but this road was otherwise not seriously affected except that high water near Norwich, N. Y., caused the detouring of milk trains for two days over the Lackawanna, between Norwich and Utica. The Delaware & Hudson reported on March 24 that its Adirondack branch was still out of service due to washouts but that conditions were otherwise normal except for a few slow orders. Aside from the high water encountered around Williamsport, Pa., Allentown, and Shamokin, as reported last week, the Reading was not affected.

New England Roads Seriously Affected

The floods caused by the rising Connecticut started March 11 and, after reaching a peak of 24.4 ft. above normal at Hartford on March 16, receded until the morning of March 18 when the rise commenced again to continue uninterrupted until the record-breaking peak of 37.97 ft. above normal was reached on March 21. The previous highest figures on record are 31.51 ft. in 1854 and 29.97 ft. in 1927. By the evening of March 23 the waters had dropped only 4.5 ft. The principal New York, New Haven & Hartford routes affected by this and other floods in its territory were: The Springfield line, north of Hartford; the Berkshire line, from Canaan, Conn., north; the Norwich and Worcester branch, from Groton, Conn., to Worcester, Mass., and the Providence and Worcester branch.

On the night of March 23 the line between Hartford and Springfield was still out of service on account of water over the track. The Berkshire line had been put in condition for freight service, passenger service north

of Danbury, Conn., being taken care of by buses. The Norwich and Worcester Branch was ready for operation with the exception of that portion between Putnam, Conn., and Webster, Mass., which will not be ready for two to three weeks. The Providence and Worcester branch was ready for service with exception of a bridge at Wilkinsonville, Mass., repairs to which were expected to be completed in about three days. The New Haven lost three spans of its bridge at Turners Falls, Mass., and its trestle at East Hartford, Conn., is damaged to an extent unknown at present on account of its being under water.

Passengers between Hartford and Springfield were being handled by motor coaches of the New England Transportation Company, as was the case wherever possible on other passenger routes out of service.

While the Boston & Albany tracks were washed out at Huntington, Mass., B. & A. trains were detoured over the New Haven via Springfield until the New Haven tracks were taken out of service between Hartford and Springfield, and then were operated via the Short Line route between Boston and Mott Haven, N. Y. A total of 23 B. & A. passenger trains were thus operated eastbound and 18 westbound during the period from March 18 to 21.

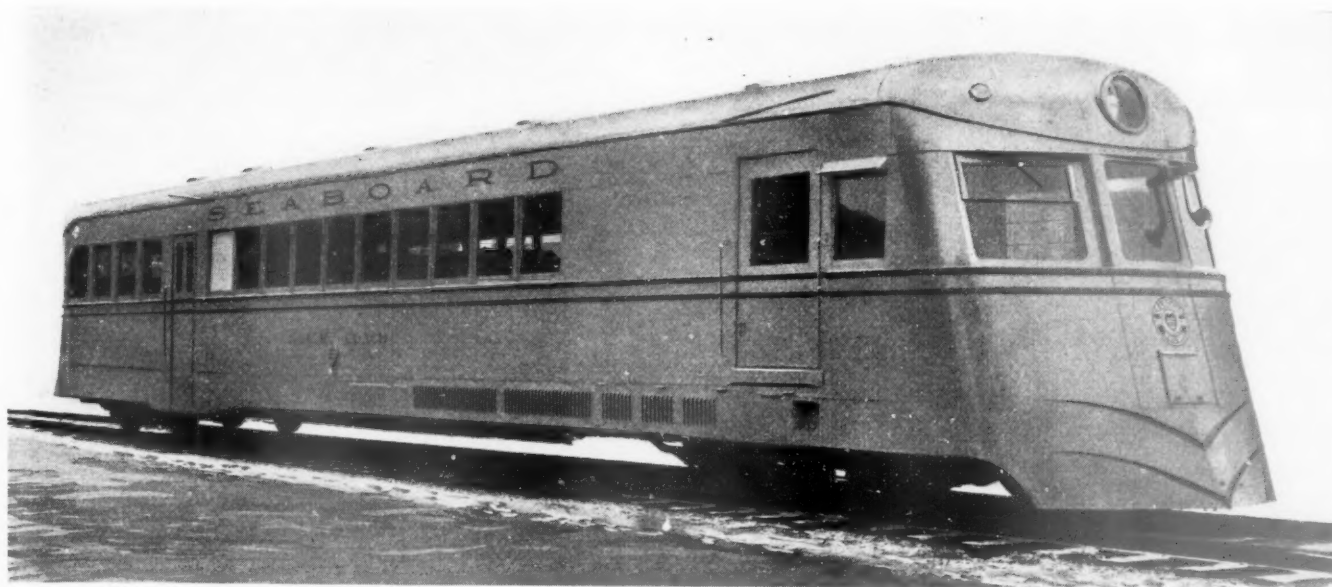
By the first of this week normal passenger and freight service had been resumed on both Eastern and Western routes of the Boston & Maine's Portland division between Boston, Mass., and Portland, Me. On March 25 service was reopened between Boston and Montreal, via Bellows Falls, Vt., and the Rutland. It was expected that the B. & M. Connecticut division from White River Junction, Vt., to Springfield would be open by noon on March 26. The line from Greenfield, Mass., to Troy, N. Y., and Mechanicville remained open all during the period of the floods.

The B. & M. was this week providing Nashua, N. H., with freight service from Ayer, Mass., and was serving Manchester, N. H., from Lawrence, Mass. It had a direct route to and from the west by connections with the Grand Trunk at Portland; also via B. & M. gateways at Worcester and via the North Conway, N. H., branch, connecting with the Canadian lines and the Central Vermont. Meanwhile all Boston & Maine Transportation Company and Maine Central Transportation Company bus lines were open. Trucks of the transportation companies were handling l.c.l. freight from railheads to places not yet reached by rail, while rail lines remaining affected were being opened rapidly.

Airplanes of Boston Maine-Central Vermont Airways played a big part in furnishing constant service for passengers, mail and express from Boston to Manchester, N. H., Concord, White River Junction, Vt., Burlington, Portland, Me., Augusta, Waterville and Bangor. The air lines ran many extra trips and did night flying with passengers, mail and express between Boston and Portland. Rail service to maritime provinces via a detour route was expected to be resumed about the middle of this week, although on March 25 the water was still running high in the vicinity of Bangor. No major bridges on the Boston & Maine were damaged, and the two small ones which still blocked the Fitchburg division route on March 25 at Royalston, Mass., can be salvaged. The road expected normal service to most all Boston & Maine points by March 29 with the exception of the direct main line beyond Lowell, Mass., to Nashua, Manchester and Concord. There will, however, be a connection into Concord from the north.

The Maine Central had by March 25 resumed normal
(Continued on page 554)

Motor Transport Section



Rail-Bus Trains Are Operated in Three Localities on the Seaboard

Seaboard Has Many Highway Operations

Uses train connection service and large streamlined rail-buses to keep and increase its passenger traffic

WHILE the Seaboard Air Line has not established a highway subsidiary as such, its officers have been alert to the possibilities of rail-highway co-ordination, and, in numerous cases at various points on the system, rail-highway co-ordination is in successful operation. This consists of a wide variety of operations to meet competitive conditions, to provide greater flexibility of service, to eliminate local stops by through trains, and, in general, covers all conditions under which it has been found that rail-highway co-ordination is efficient.

The operations consist of two lines operated by the Seaboard handling passengers, parcel post and express, four station-to-station truck lines operated by the Seaboard for handling merchandise, three contract routes with the Railway Express Agency for handling mail and express and one contract operation with a local drayman for handling express. The Seaboard has also arranged with the Florida Coach Lines for a train connection bus service in western and central Florida. In addition, the Seaboard has purchased and put in operation since the first of this year, three streamlined rail buses.

The streamlined rail-bus motor coach trains were described, so far as their mechanical features are concerned, in the *Railway Age* of January 18, page 140.



Rail-Highway Operations on Northern Portion of the Seaboard



Type of Equipment Used by the Seaboard for Its Florida Station-to-Station Runs

They were built by the American Car & Foundry Company and are self-propelled, single-car assemblies, which are air-conditioned and equipped with roller bearings and rubber insulated springs for more comfortable riding. Their combination of unusual, attractive appearance, easy-riding and convenient schedules have already brought returns in increased passenger traffic. At the same time, while it is still too early to give definite figures as to their cost per mile, enough experience has been had with similar equipment on other roads to indicate that this cost is sufficiently low to yield more than adequate returns, even with relatively light traffic.

The Rail-Bus Motor Coach Trains

The rail-bus motor coach train operating between Richmond, Va., and Raleigh, N. C., was put on to relieve the through steam trains of local stops between these points. Its schedule provides for 8 regular intermediate stops and 22 flag stops in each direction. The train makes a round trip of 314 miles daily, and traverses the 157 miles in 4 hr. 10 min. southbound and 4 hr. 5 min. northbound.

The train between Jacksonville, Fla., and Tampa re-

places a two-unit motor train of less modern design, which was much more costly to operate. The new train will continue to serve the purpose of the old one in performing local service and relieving the through trains of this work. Its schedule provides for 17 regular intermediate stops and 20 flag stops in each direction. This train makes a round trip, or 422 miles daily, and is scheduled at 5 hr. 30 min. for the 211-mile trip in each direction.

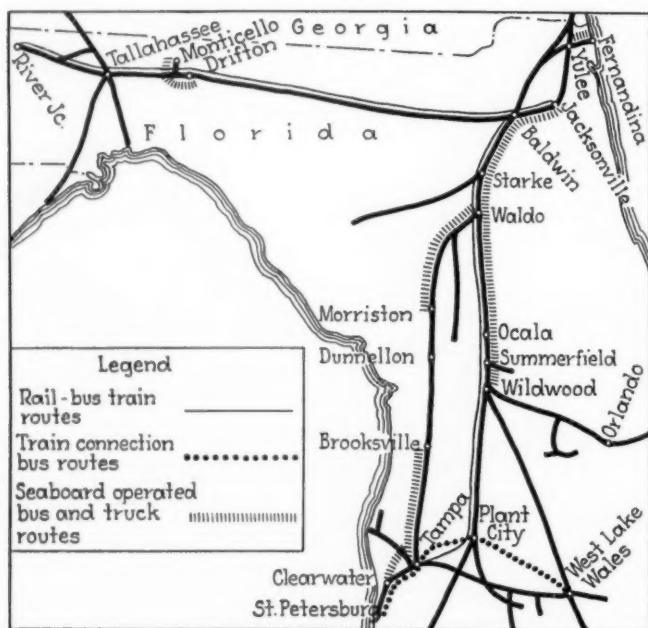
The train between Jacksonville, Fla., and River Junction, represents an additional schedule between these points and was put on to provide improved service between Jacksonville and Tallahassee, the state capital, at the request of the governor and other state authorities. This additional service was extended to River Junction, the junction with the Louisville & Nashville on the Jacksonville-New Orleans line, since this could be done conveniently without disturbing the desired schedules to and from Tallahassee. The schedule provides for 2 regular intermediate stops and 5 flag stops in each direction. This train makes a round trip, or 416 miles daily, and is scheduled at 4 hr. 40 min. westbound and 5 hr. 10 min. eastbound.

Train Connection Service

The Seaboard provides a night Cross-Florida service between the east and the west coasts with steam train service. A day schedule is also provided by means of a train connection highway bus service operated under contract with the Florida Motor Coach Lines. This additional service between Miami, Palm Beach and other East Coast points and Tampa and St. Petersburg on the West Coast, is maintained without additional train mileage.

Northbound, passengers use the morning train from Miami for Jacksonville and other points north, and change to the connecting bus at West Lake Wales that leaves there at 1:30 p. m., arriving in Plant City at 2:55 p. m., Tampa at 3:40 p. m., and thence via the Gandy bridge across Tampa bay to St. Petersburg, arriving there at 4:30 p. m.

Southbound, the train connection bus leaves St. Petersburg at 9:30 a. m., Tampa at 10:20 and Plant City at 11 a. m., making connection at West Lake Wales with the southbound train leaving at 12:45 p. m., and arriving in Miami at 5:35 p. m. the same evening. This service has proved popular with the traveling public, and coupons on through rail tickets reading Jacksonville-Miami are good via this route without extra charge, so



The Rail-Highway Operations of the Seaboard in Florida

that the service is used by many winter tourists wishing to see Central Florida by daylight.

Other highway operations cover a wide variety of service. Between Yulee, Fla., and Fernandina, 12 miles, the Seaboard operates a Ford combination bus-truck of 1½ tons' capacity and a Chevrolet closed body truck, also of 1½ tons' capacity, handling passengers, parcel post mail and express. Fernandina is an important shrimp producing center and much of this traffic originates there. These highway units are also used for local pick-up and delivery of express and l.c.l. freight, the latter under the general pick-up and delivery plan inaugurated by the S.A.L. on February 12 of this year. Traffic originating at or destined to points along this route is interchanged with main line trains at Yulee.

Between Hamlet, N. C., and Monroe, 53 miles, a General Motors 3½-ton tractor, handling a 5-ton closed type trailer, is operated, paralleling the main Hamlet-Atlanta line. This unit is used in station-to-station l.c.l. freight service, providing greater flexibility of schedules and eliminating many local stops for the through freight trains. This is exclusively a freighthouse-to-freighthouse service, as the certificate under which it is operated does not permit pick-up and delivery operations.

A Ford 1½-ton combination bus-truck is operated between Drifton, Fla., and Monticello, 4 miles. This unit connects with main line trains at Drifton and handles passengers, express and parcel post to and from Monticello.

A truck service is operated between Jacksonville, Fla., and Wildwood, 127 miles, paralleling the main line and handling station-to-station l.c.l. traffic and express. Three 1½-ton trucks, one Ford and two Chevrolets, all of the closed body type, together with two 1½-ton closed body trailers, are used in this operation, which has not only provided better service to these local points, but has also relieved main-line freight and passenger trains of many local stops for loading and unloading express and merchandise.

Services similar to the Jacksonville-Wildwood service are also operated between Tampa, Clearwater and Brooksville, 140 miles, and between Waldo, Fla., and Morriston. Three Chevrolet 1½-ton closed body trucks and two 1½-ton closed body trailers handle the l.c.l. freight and express business on these lines. These are all strictly station-to-station operations, as the certificates under which the services are operated do not permit pick-up and delivery.

Contract Services

In addition to these rail-highway co-ordinations operated with its own equipment, the Seaboard also con-

tracts with the Railway Express Agency for truck service for handling parcel post mail and express. These operations include: Hamlet, N. C., and Raleigh, 97 miles; Louisburg, N. C., and Franklinton, 10 miles; and Richmond, Va., Amptill, 5 miles.

Between Chester, S. C., and Great Falls, 22 miles, a local drayman is under contract for one round trip daily to handle express via truck. This service is only for the purpose of handling express to and from Great Falls, and no intermediate service is performed, as the route does not parallel the railway.

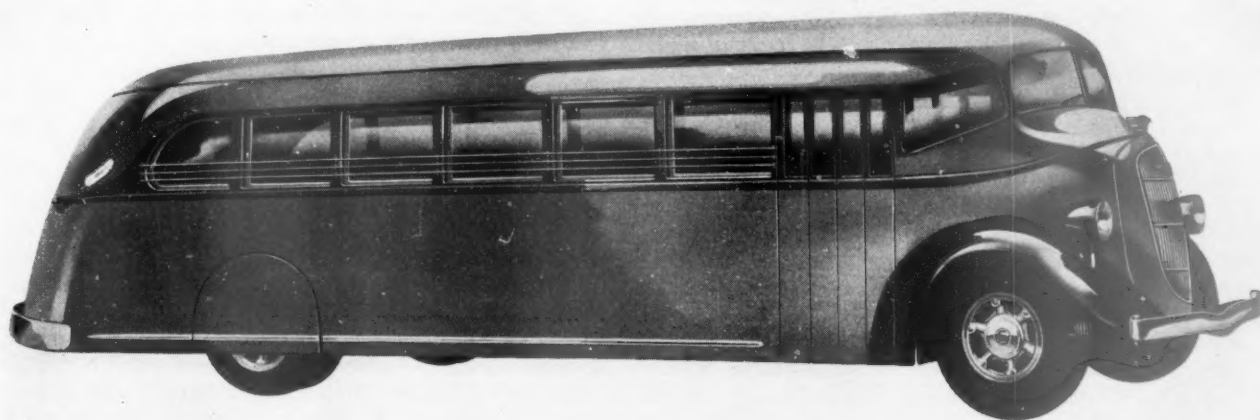
Most of the above operations were inaugurated for the purpose of relieving heavy freight and passenger trains of incidental local work and stops. In this purpose, they have been eminently successful.

Two New Studebaker Buses

TWO new low-priced bus chassis have been announced by the commercial car division of the Studebaker Corporation, both of which will be put into production at once. One of these chassis has a 157-in. wheelbase and is powered with a Studebaker engine of 217-cu. in. displacement, which develops 75 hp. at 2,800 r.p.m., and a maximum torque of 160 ft. lb. It has two-stage underslung springs and a 30-gal gasoline tank mounted at the side of the frame.

The second chassis has a wheelbase of 167 in. It is of the "cab forward" type, is powered with a Waukesha engine of 263-cu. in. displacement, a high torque of 176 ft. lb. and is capable of developing 80 hp. at 3,000 r.p.m.

The engines of both chassis have been moved forward. The design of the engine housing of the longer chassis and the location of control levers make its operation simple. Cooling provisions on this chassis are more efficient than on conventional jobs. The engine hood is lined with insulating material one inch thick to insure comfort for the driver. Service work has also been given careful consideration and it is claimed that 90 per cent of the possible service adjustments are made easier by this type of chassis. Quick accessibility to carburetor, distributor, water pump, wiring and spark plugs is provided. The engine may be entirely removed from the chassis from either the front or rear end with ease.



One of the New Studebaker Bus Models



Type of Equipment Used by the Great Northern on Lines East. (Insert) Part of the Fleet at the Great Falls, Mont., Station

Mountain Operations Prove No Obstacle

Great Northern Stages solve problems involving severe climatic and physical difficulties in Montana

ON March 1, 1935, the Great Northern, which, in its development of the Northland Greyhound Lines was one of the first roads to use rail-highway co-ordination, inaugurated a system of truck routes in Montana which extend over mountain highways ranging from 3,330 ft. to 6,354 ft. above sea level. This company also operates a bus-truck route in Montana and three truck routes in Minnesota.

The most varied operating conditions are encountered in this territory. While most of the roads are hard-surfaced, part of the operation is over gravel roads in extremely mountainous territory. The temperatures encountered range from 95 deg. above zero in the summer to long periods of sub-zero weather in the winter. Snow and icy road conditions prevail throughout the winter season. Despite these handicaps, however, in 700,000 miles of operation, an excellent on-time record has been maintained; only six road failures have been encountered, and there have been no serious accidents. This

remarkable record is attributed to the fact that the highway operations are supervised by railway men who have had long experience in providing safe and reliable transportation under all sorts of climatic and physical conditions.

Detailed Operations

As indicated on the accompanying map, the Montana rail-highway co-ordination operations are centered at Great Falls. At this focal point, i.e., freight is picked up throughout the day by a local drayman, on a contract basis, and brought to the railway's freight station, where it is sorted in station order. It is then loaded on trucks of the Great Northern Stages for the station-to-station haulage. These trucks leave Great Falls between 6:30 and 7:30 the following morning, and the merchandise is delivered at the merchants' store doors before noon at most points. On the Great Falls-Butte line, however, night trucks are operated, leaving Great Falls at

6:30 p.m., and providing early store-door delivery the following morning.

At present, these trucks operate as follows:

Between	Mileage	No. of intermediate stations served
Great Falls-Butte	159	13
Great Falls-Lewistown	115	11
Great Falls-Browning	135	8
(via Chouteau and Dupuyer)		
Great Falls-Shelby	89	8
Great Falls-Big Sandy	78	7
Havre-Shelby	105	16

In addition, one truck makes a round trip daily between Shelby and Cut Bank, 25 miles in each direction, and also between Shelby and Sweet Grass, 39 miles in each direction. This truck makes connections with the trucks operating between Great Falls and Havre. All the schedules are worked out with a view to giving patrons the best possible service from Butte, Helena, Great Falls, Havre and Lewistown, the principal distributing centers in the territory.

Service Performed

The highway trucks perform pick-up and delivery service along the various routes, except in the large towns where too much delay to the road trips would be involved. At such points, contracts have been made with local drayage firms for collection and delivery service. This service has proved to be popular with shippers and receivers and they have responded with increased traffic for the Great Northern.

One of the problems involved in these operations was the handling of perishable freight in l.c.l. lots. All of the trucks in road service are equipped with insulated bodies and are refrigerated for handling perishables during the summer months, and the unit van type trucks are equipped with hot water heaters and charcoal heaters are used in the trailer bodies during the winter. This protection has proved quite adequate, and perishable freight now forms an important item in the traffic of the Great Northern Stages.

Equipment

Eleven trucks with a number of trailers are used in this service. Four 3½-ton tractors, with 110-hp. motors and double-reduction rear axles, hauling large 12-ton semi-trailers, are used regularly between Great Falls and Shelby, Shelby and Havre, and elsewhere as needed.

Three large van-type 10-ton trucks are used between Great Falls and Butte, where the severest mountain conditions are encountered. These trucks have 150-hp. motors and tandem double-reduction rear axles. They are equipped to pull a four-wheel trailer when needed, and when the road conditions permit.

Three 94-hp., 5-ton, van-type trucks are used on the Great Falls-Lewistown, Great Falls-Havre and Great Falls-Dupuyer-Browning routes. The shuttle service between Shelby and Cut Bank and between Shelby and Sweet Grass, where business is lighter and road conditions are not favorable to heavy truck operation, is protected by a van-type 2½-ton, 76-hp. truck. All the units, except the 2½-ton truck, are equipped with heavy-duty air brakes.

All truck maintenance is centered in the shop and garage of the Great Northern Stages at Great Falls, Mont. Only emergency work is done at outlying points, and this is seldom necessary in view of the thorough and regular inspection given the equipment. Except for the combination bus operating between Havre and Shelby and the small shuttle truck at Shelby, the sched-



One of the Mountain-Climbing Truck-Trailer Units

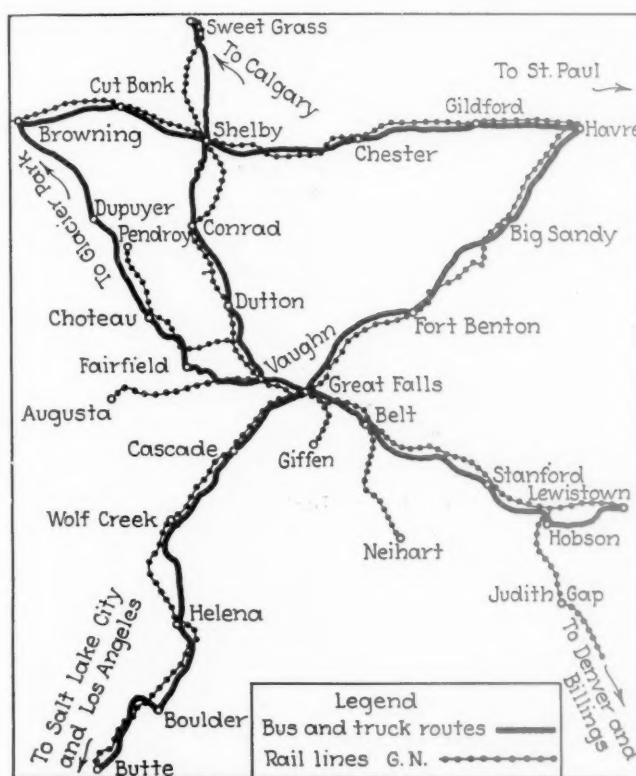
ules are so arranged that all trucks come to Great Falls for inspection and necessary maintenance work every second day.

Between Havre and Shelby, 105 miles, along the Great Northern's main line, a combination bus-truck for handling passengers, mail, express and baggage has solved an expensive and difficult railway operating problem. This combination unit serves 16 stations and has eliminated stops at 14 of these points for the Empire Builder and fast mail trains Nos. 27 and 28.

Rail-Highway Service on Eastern Lines

The Great Northern also has three rail-highway coordinations on its eastern lines. Between Elk River, Minn., and St. Cloud, 37 miles, a 1½-ton truck equipped with an insulated body, is operated, the cab of which is equipped with a hot water heater and the body with an air heater. This route has daily, except Sunday, service and handles l.c.l. freight for distribution at the terminals and various intermediate stations. Milk and cream shipments are also handled by this truck.

Between Tintah, Minn., and Evansville, 32 miles, the

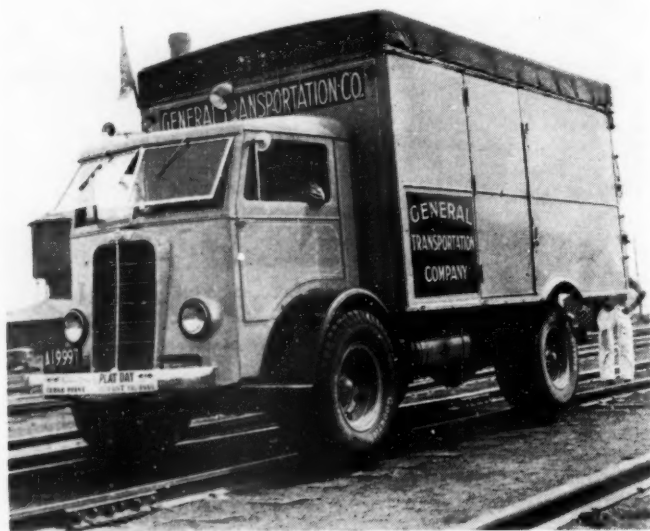


Where the Great Northern Stages Operate

Great Northern operates a light traffic branch, connecting two important main lines. On this line a 3-ton truck has provided more frequent and flexible service than was provided previously by trains. Between Breckinridge, Minn., and Fargo, N. D., 27 miles, on the main line, there was not sufficient business to justify the operation of an additional way freight train and the local work in this area was formerly done by the St. Paul-Winnipeg fast freights, Nos. 405 and 406. Stopping at stations to unload l.c.l. freight delayed these important trains, and was particularly expensive in the fall, when the eastbound train handled up to 150 cars. To eliminate the stopping of these trains, truck service was installed some months ago to pick up and deliver the l.c.l. freight in this area. This truck also handles cream shipments and thereby frequently avoids the stopping of eastbound passenger train No. 4. Not only has this new truck line expedited l.c.l. freight deliveries, but it has effected a saving estimated at \$20,000 a year by avoiding train stops and delays to important trains. A new 3-ton truck has recently been purchased for use in this service.

New Rail-Highway Unit

A NEW rail-highway motor truck, loaded with rubber tires, recently made a successful test run from Akron, Ohio, to Cleveland over Baltimore & Ohio tracks, turned off the rails in Cleveland and then proceeded to its destination over the highway. The truck, made by the Hendrickson Motor Truck Company for C. C. Nugent of the General Transportation Com-



The Nugent Truck in Action

pany, Boston, Mass., has combination wheels, which carry special Goodrich truck tires mounted beside steel flanged railway wheels. The truck is driven on the rails at any crossing. The rubber tires are then deflated, so that the truck settles down with its steel wheels on the tracks. The front wheels are locked when the truck is on the tracks and the driver has no steering to do. When the truck arrives at its rail terminus, tires are inflated simultaneously from the engine by the same air system used for brake operation.

Filing of Motor Tariffs Again Postponed

THE Interstate Commerce Commission, Division 5, on March 21 entered an order further extending the effective date of Sections 216, 217 and 218 of the motor carrier act, except to the extent that they apply to the filing of tariffs stating joint rates, fares and charges in connection with common carriers by railroad or railroad-owned or controlled common carriers by water. These sections deal with the publication and filing of tariffs and schedules for transportation services performed by motor carriers subject to the act. The effect of this order is to require that tariffs and schedules be filed with the commission on or before March 31, to become effective on April 1.

The further postponement of the time for filing tariffs and schedules was granted in response to numerous requests received from motor carriers and their associations. These carriers stated that the flood conditions existing in many sections of the country had created an emergency making it impossible for them to file their tariffs and schedules on the date required.

Without the postponement operators who had filed tariffs by mail that did not arrive in time would have been technically subject to penalties and many were delayed in last-minute work on their tariffs by emergencies arising from the flood conditions. As it was, some 50,000 tariffs were filed with the commission by the date set by representatives of bus and truck operators, many of them by tariff-publishing agencies representing groups of operators.

Attention was again called to the fact that the commission has provided that the rates, fares and charges as shown by the tariffs and schedules shall be effective on April 1. This is the limit of the commission's authority to extend the effective time of any provision of the motor carrier act.

Order on Extension of Credit

Pending determination of proper rules and regulations governing the extension of credit, the commission, by order dated March 17, has authorized common carriers by motor vehicle to extend credit in the collection of transportation charges for a period not exceeding 30 days.

Section 223 of the motor carrier act provides in effect that common carriers by motor vehicle may not extend credit in collecting transportation charges due on shipments of freight which they have transported except under rules and regulations prescribed by the commission.

Particular attention is directed to the requirement in the order that carriers shall, before extending credit, take precautions deemed sufficient to assure payment of the freight charges within the credit period, such as examination of the shippers' credit ratings or the obtaining of satisfactory surety bonds.

Carriers are not required to extend credit. However, to prevent unjust discrimination or undue preference or prejudice, the commission says, the period for which credit is extended by any motor carrier should be the same to all receivers of freight who give satisfactory assurance that the tariff rates and charges will be paid within the credit period; that is to say, credit may not be extended by a motor carrier for a given period to one and for a different period to another receiver or shipper of freight, where the credit standing or other circumstances are determined to be substantially similar.



A New White Bus-Truck in Santa Fe Service That Handles Passengers, Express, Mail and Merchandise

Santa Fe Bus-Truck Operations Prove Successful

Through its subsidiary, the Santa Fe Transportation Company,
this road is operating three lines in Kansas

THE Santa Fe Transportation Company, wholly-owned subsidiary of the Atchison, Topeka & Santa Fe, has supplanted mixed service and rail motor car service with highway operations on two routes and supplemented existing local freight service on one route in Kansas, with the result that operating losses have been stopped and net revenues are now being shown. These three operations differ not only from each other but also somewhat from the operations of the Santa Fe Transportation Company in California, which were described in the Motor Transport Section of the *Railway Age* of August 24, 1935, page 253.

Detailed Operations

Between Strong City, Kan., and Eldorado, a combination passenger and l.c.l. freight service is operated; between Florence, Kan., and Arkansas City, a passenger service is operated, which also handles baggage, mail and express service; while between Atchison and Topeka, a l.c.l. freight service is operated. Each of these highway services was established for a different reason, but, in each instance, only the Santa Fe rail stations and other rail facilities are served, while the supervision of the various phases of these activities is provided entirely by railway officers. A further saving is effected in each case by reason of the highway service relieving rail service of numerous local stops which would otherwise be required.

The Strong City-Eldorado route covers a round trip mileage of 103 miles daily, and has supplanted a mixed train service which was not only less flexible, but more costly as well. The problem involved here was that the volume of local freight and passenger traffic was quite insufficient to cover the cost of rail operations. However, the Santa Fe provided the only passenger, mail and express service for the district, and the con-



The Santa Fe Advertises Its Service on Its Trucks

venience and necessity of the local communities required a continuation of such service. The use of highway vehicles provides a cost of operation more nearly commensurate with the revenue derived. This purpose has been achieved, and, instead of an operating deficit, this service now shows a small net revenue. Moreover, both shippers and receivers, as well as passengers, are well satisfied with the present service and schedules, which provide for a round trip leaving Strong City daily, except Sunday, at 7 a. m., arriving at Eldorado at 9:50 a. m., and, returning, leaving Eldorado at 10:35 a. m. and arriving at Strong City at 1:10 p. m., serving seven intermediate stations on each trip.

This service is protected by a Ford 1½-ton tractor with a 5-ton trailer, the combined unit having a capacity for 5 passengers in addition to 14 ft. of closed space, which is used for baggage, pouch mail, express and l.c.l. freight. The unit is serviced by the railway mechanical forces at Strong City.

The Florence-Arkansas City Route

The route between Florence, Kan., and Arkansas City, takes the place of a rail motor service that was formerly operated at a loss between Florence and Winfield. Having been started only last fall, this route is still regarded as more or less experimental, although the previous operating deficit has been eliminated.

This route covers a round trip mileage of 199 miles daily, leaving Arkansas City at 7:25 a. m., and arriving at Florence at 11:25 a. m. On the return trip, the run is also made in 4 hr., leaving Florence at 3 p. m. and arriving at Arkansas City at 7 p. m., serving 10 intermediate stations each way. The users of the service have been convinced of its entire dependability.

A new model White combination bus-truck in one unit is used in this service. The vehicle has a weight of 16,400 lb., with a length overall of 31 ft. Its passenger capacity is 16, and it has a 14-ft. enclosed compartment for baggage, mail and express, with a rated capacity of 3 tons. It is heated and ventilated, has dual rear wheels, and carries its spare tires in the freight compartment. This unit is serviced and maintained by railway mechanical forces at Arkansas City.

The Atchison-Topeka Run

The run between Atchison and Topeka, 138 miles a round trip, is for l.c.l. freight only and is supplemental to the existing train service between those points. Its use provides more prompt service and a better outlet for the relatively small tonnage from the distributing centers at Topeka and Atchison which would not justify additional freight train service, but which produces a satisfactory net revenue with truck service.

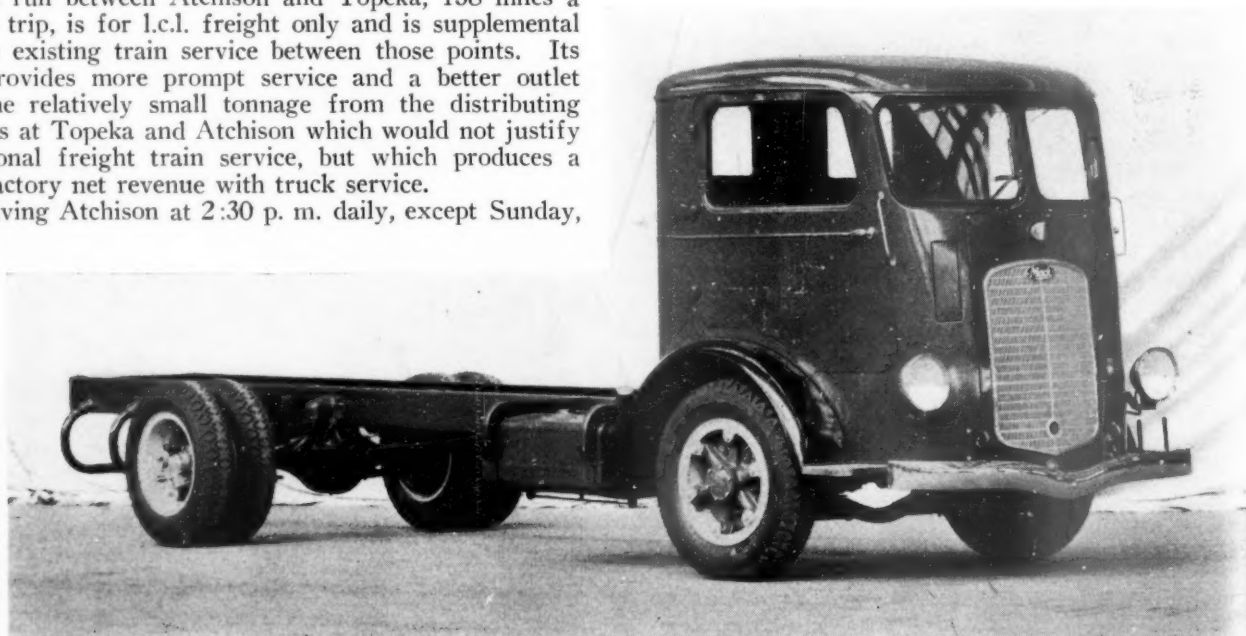
Leaving Atchison at 2:30 p. m. daily, except Sunday,

the truck arrives at Topeka at 5:35 p. m., leaving there at 6:20 p. m. it arrives at Atchison at 9 p. m., serving six intermediate stations each trip. This schedule is arranged to connect with main line train service at Topeka, and with connecting line trains at Atchison, and has resulted in expediting merchandise from and to the area served as much as 24 hr. in most cases. That wholesalers and receivers are pleased with this expedited and supplemental service is indicated by the fact that they have responded by routing an average of 5,000 lb of merchandise daily via the Santa Fe which that railroad did not previously enjoy. This route is protected by a Dodge 1½-ton truck, which is serviced and maintained at an Atchison garage, since there are no railway mechanical forces available at that layover point.

These highway services have proved valuable to the Santa Fe from a revenue-producing and loss-eliminating standpoint. They have also been valuable as a proving ground, whereby Santa Fe officers may familiarize themselves with highway transportation and rail-highway co-ordination, preliminary to any expansion of such services that may take place.

New Macks

MACK Trucks, Inc., have announced two new "traffic type" trucks which are lighter than any of their previous models. Modernly styled, the cabs of the new models have a sloping front sheet and windshield which, together with a smooth radiator grille, permit harmonious blending with streamline body types. The roof is of all-metal construction and is built integral with the cab. The doors are exceptionally wide and are conveniently hinged at the rear. A wide easy-mounting step is located at the front of the fender at bumper height. Chromium-plated grab rails are immediately adjacent to the door handles. Divided vertically in two sections, the windshield is arranged in a shallow V and is slanted to prevent reflection. Each section is hinged at the top, thus allowing each one to be opened or closed independently of the other.



One of the New Mack Chassis of the "Traffic" Type

Continued on next left-hand page



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Rail-Highway Transportation Takes New Spurt

Unusual activity in both bus and truck fields characterizes developments in past month

NOT since last fall, when the railways purchased a number of bus and truck lines, has there been so much activity in the bus and truck field as during the past month. Numerous plans for the purchase of new companies, the consolidation of existing companies and the extension of rail-highway co-ordination have been made public. Among the more far-reaching developments have been the formation of the National Trailways System and the applications of Pennsylvania, Van Sweringen and Atchison, Topeka & Santa Fe affiliates for authority to expand their highway services. Also, the eastern roads have been perfecting plans for operating the l.c.l. storedoor services which are to be inaugurated there generally on April 1, thus bringing pick-up and delivery on a country-wide basis.

National Trailways System

The National Trailways System has been organized as an association of the Burlington Transportation Company, the Frank Martz Coach Company, the Missouri Pacific Transportation Company, the Safeway Lines, the Santa Fe Trail System, the Rio Grande Motor Way, the Denver-Salk Pacific Stages, Inc., and the Denver, Colorado Springs & Pueblo Motor Ways, to co-ordinate the operation of the motor coaches of these companies throughout the United States. Similar to the set-up of the Greyhound Lines, there is no change in the corporate and operating structure of the individual lines. While the buses owned by all companies will be painted the same color and bear the emblem of the National Trailways System, they will continue to be owned by the participating companies, Trailways merely handling national advertising and co-ordinating schedules, and the establishment of provisions for continuous passage on one ticket from any point on the network to another. Joint use of terminal facilities is being arranged, consolidations and construction of joint terminals being handled by terminal companies owned by individual lines using the facilities. New terminals are planned for New York, Chicago, Los Angeles, Cal., and other cities.

The operation of Trailways will be directed by a managing committee, with headquarters in Chicago. This committee consists of Chairman H. W. Stewart, general manager of the Burlington Transportation Company; Frank Martz, treasurer and general manager of the Frank Martz Coach Company; P. J. Neff, vice-president and general manager of the Missouri Pacific Transportation Company; Paul O. Dittmar, president of the Safeway Lines; and A. E. Greenleaf, vice-president and general manager of the Santa Fe Trail System.

Pennsylvania Affiliates Expanding

Plans of the Pennsylvania for developing a system of correlated and affiliated motor truck operations were partially disclosed in applications filed recently with the Interstate Commerce Commission by the Pennsylvania Transfer Company of Pittsburgh, Pa. The latter, one of

a group of companies controlled by the P. R. R. through the American Contract & Trust Company, is seeking authority under the motor carrier act to acquire the Chicago-Cincinnati Motor Freight Lines for \$15,000, the Alko Express Lines for \$162,500 and the Barker Motor Freight, Inc., for \$25,000. The former operates in Ohio and from Chicago to Cincinnati and Erie, Pa.; Alko Express operates between Lancaster, Pa., and Pittsburgh with various branch lines; and the Barker company operates in Michigan, Ohio, Pennsylvania and West Virginia.

In the Alko application the Pennsylvania Transfer Company said: "This application is one of several of a similar character being filed by subsidiaries of the Pennsylvania Railroad Company for acquisition of certain truck operations designed in the public interest to further the development of a system of correlated and affiliated truck operations, co-ordinated with, paralleling, and feeding the rail lines of the Pennsylvania Railroad. In a measure this system is, as developed and developing, comparable to that long since developed and accomplished by the Pennsylvania Greyhound Lines with respect to passenger traffic. The actualities and possibilities of truck co-ordination with, and utilization by, rail lines, are of course greater than with the bus. Study and actual experience have already demonstrated this.

"In the development of such a truck system the applicant as a factor therein will be enabled to co-ordinate its service with the Pennsylvania and thus enable it, the railroad, to effectuate greater efficiency in its existing truck-rail co-ordinated service, and also will enable it to be in a position to afford, in the public interest, to its patrons and the general shipping public, alternative or co-ordinated service by truck or by rail or by both, depending, as to the particular movement, either on the requirements of the shipper and the nature of the service involved, or on a determination of the more economical and efficient method of furnishing the transportation service required, or both. Opportunity will be afforded under one general control, and specialized operating managements with adequate financial responsibility, to co-ordinate both agencies of transportation, and to use either or both purely according to the dictates and necessities of sound transportation economics, subject to the plenary jurisdiction, direction and control of the Interstate Commerce Commission, and divorced from other considerations customarily incident to rail and truck operations not under common control and correlated managements."

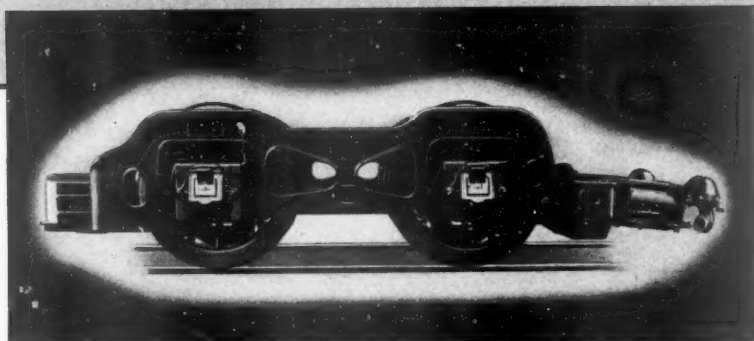
Two other Pennsylvania affiliates—the Willett Company of Indiana and Scott Brothers, Inc., of Philadelphia—have pending before the I.C.C. applications for permission to operate as contract carriers in storedoor services of the railroad. The former would operate on routes in Indiana, Illinois and Kentucky while Scott Brothers seeks authority to perform pick-up and delivery services for the Pennsylvania and the Long Island in the New York metropolitan area. Hearings on these



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applications have been held before joint boards created under the motor carrier act.

P. R. R. Interest in Bus and Truck Lines

Representatives of protesting independent truckers at the New York hearings on the Scott Brothers application endeavored to determine whether or not the application was a move to supplant New York truckmen holding pick-up and delivery contracts. Pennsylvania officers, appearing as witnesses for the applicant, were unable to make definite statements as to future policies. R. J. Littlefield, supervisor of motor service, did say, however, that the Pennsylvania feels that it should have its own affiliate in the field to perform collection and delivery services—and especially to protect the situation after the anticipated expansion when the April 1 tariffs become effective. Mr. Littlefield also sketched briefly the Pennsylvania's interest in bus and truck companies. It has, he said, a 50 per cent interest in the Pennsylvania Greyhound Lines, operating 300 vehicles in long-haul passenger service; through the American Contract & Trust Company, it has investments in 19 trucking companies operating 1,700 units of equipment primarily in local service. Also, it uses in its collection and delivery service approximately 1,000 trucks operated by contractors.

Other Rail-Highway Developments

Expansion by Van Sweringen affiliates in the highway field is sought in other recent applications filed with the I.C.C. by the Niagara Freight Lines, Inc., of Syracuse, N. Y., and the Cleveland, Columbus & Cincinnati Highway, Inc. The former seeks to acquire control of the Southern Tier Motor Freight Service, operating between Binghamton, N. Y., and Buffalo, while the latter would purchase the Reo Transportation Company which operates in Ohio and West Virginia. The applicants are controlled by the Pittston Company, a subsidiary of the Erie.

Last week the Santa Fe Trail Stages, an affiliate of the Atchison, Topeka & Santa Fe, applied to the I.C.C. for authority to acquire control of the Central Arizona Transportation Lines, Inc., and Arizona-Utah Stages, Inc. The purchase price was set at \$75,000. The application set forth that Santa Fe Trail Stages is controlled by the Southern Kansas Stage Lines, which in turn is controlled by the General Improvement Company, a Santa Fe subsidiary. The applicant company stressed its desire to round out the Santa Fe Trail Stages system with the routes of Central Arizona.

The latter has a north-and-south route between Phoenix, Ariz., and Salt Lake City, Utah, which, it is pointed out, will constitute a valuable feeder line and also furnish an optional route between California and all territory East, via Phoenix. Also, the application continued, there will result no undue restraining of competition; on the contrary the proposed set-up "will create a competition not heretofore existing, and will enable the Atchison, Topeka & Santa Fe to use the service of the Central Arizona Transport Lines to advantage in its operations. The territory served by the Santa Fe Trail System is described as an area almost entirely contiguous to the parent railroad's lines where there are "numerous opportunities" for co-ordination. The Central Arizona Transport Lines, the application continues, "now furnishes the only direct regular common carrier bus service between the cities of Salt Lake City and Phoenix" where it has no competition, but with it a part of the Santa Fe Trail System "a healthy competition will be established by railroad or bus between large existing

systems of rail and bus operations between the territory Mississippi river and East, and California."

Next there is the proposed tie-up between the Chicago Great Western and the Keeshin Motor Express Company for the carrying of trucks on flat cars between Chicago and the Twin Cities. However, this tariff filed to become effective March 10, was suspended until October 10 for investigation by the Interstate Commerce Commission after protests of competing roads.

Railroads Resuming Normal Services After Disastrous Floods

(Continued from page 544)

main-line passenger and freight service from Portland to Bangor, via Lewiston, and beyond Bangor to Eastport and Calais. A shuttle freight service was in operation from Waterville to Augusta and Gardiner. Passengers for Kennebec river points were being handled by bus from Winthrop station. The line from Bangor to Vanceboro was still blocked by high water, and there was no service on the Rumford branch. It had not yet been determined whether to build a temporary or permanent bridge over Androscoggin river at Brunswick-Topsham, since it may be possible to salvage the bridge swept from its piers by ice.

By March 23 the Central Vermont's northern division was open to restricted local train service between White River Junction and Montreal. There was no through service south of White River Junction, but the road, to provide passenger service from Montreal and Vermont to Boston, was co-ordinating Montreal-Burlington trains with the Central Vermont-Boston Maine Airways' mail and passenger planes operating between Burlington and Boston. Over last week-end these planes were flying four round trips daily and this week two round trips. The C. V. southern division was on March 23 open for service between New London, Conn., and Miller's Falls, Mass. The most serious damage to this division was the loss of three of the five spans of bridge 95 between Northfield, Mass., and East Northfield, Mass. Here the C. V. planned to detour to Miller's Falls over the Boston & Maine, via Greenfield, as soon as the B. & M. line was open between East Northfield and Brattleboro.

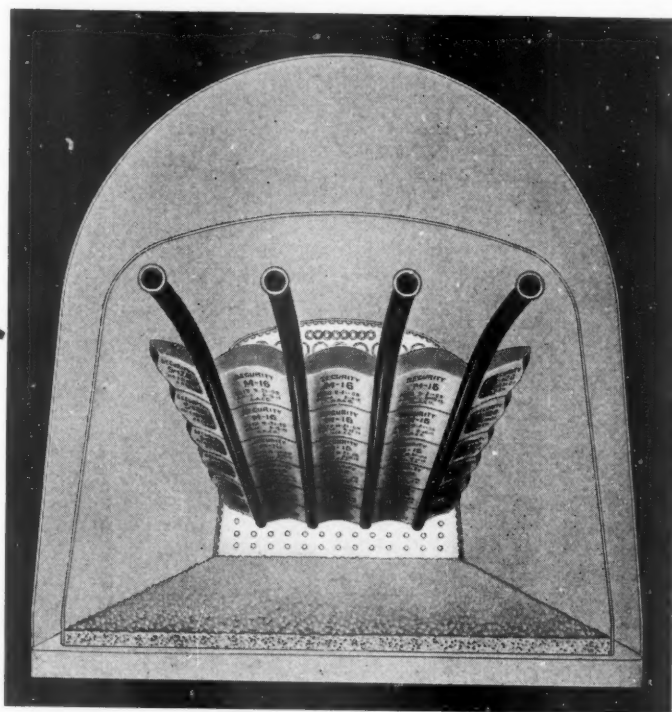
In addition to the difficulties encountered between March 11 and 14, as reported in last week's issue, the service of the Rutland was again interrupted by flood conditions on March 18 on the line south of Burlington, Vt. The line was opened south of Rutland on March 20, excepting the Bellows Falls subdivision. The Connecticut river caused serious damage at Bellows Falls and vicinity but service from Burlington to Rutland was resumed on March 22. The Bellows Falls subdivision was opened March 23. The total estimated damage to this road from March 11 to date is \$50,000 to \$75,000, exclusive of loss of revenue.

The Boston & Albany estimates that the floods damaged its lines and facilities to the extent of \$200,000 to \$250,000. They caused numerous washouts and flooded the West Springfield, Mass., shops and engine houses. By March 23 main line and some branch line train operations were normal, except for some delays. It was expected that all branch-line service would be restored by the middle of this week. This road reported that at Springfield, Mass., last week the Connecticut river was 6 ft. higher than at any other time on record and on March 23 it remained above the highest 1927 record.

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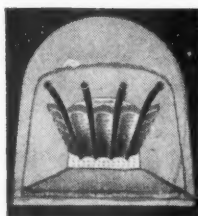
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NEWS

Labor-Management Conferences Continue in New York

Conferences between the railway management and labor committees, formed to negotiate a voluntary agreement for the protection of employees displaced in consolidation projects, were resumed in New York this week. While the usual "we are making progress" statements were made after each session, no definite details as to the status of the negotiations were forthcoming. It is understood, however, that a new proposal, offered by the railroad representatives on Tuesday, was under discussion in subsequent meetings.

Although President Roosevelt in his letter to the railroad and labor organizations had expressed the hope that the question of some plan for protecting labor displaced by co-ordination projects could be settled by negotiation and agreement rather than by legislation, subsequent developments have indicated that the threat of the legislative plan proposed by the Railway Labor Executives' Association in the Wheeler-Crosser bill is to be used in an effort to apply pressure to the railroads to agree to some similar plan. The President's letter was taken originally as an indication of his disapproval, inspired by Co-ordinator Eastman, of such a drastic restriction on labor-saving economies as would be imposed by the Wheeler-Crosser bill, even more restrictive than Section 7b of the emergency transportation act.

However, while Mr. Eastman was away from Washington, a committee of the Railway Labor Executives' Association called on the President and expressed concern lest they should be prevented from pressing for action on their bill while the President was away on his vacation trip. After this a statement was issued from the White House saying the President had personally requested that both sides continue their negotiations in an effort to reconcile their differences, that "in the meantime, the President has indicated to Congressional leaders that continuance of these negotiations should not interfere with consideration of pending legislation bearing on the subject of rail consolidations," and that "He has assurances that they will proceed with the consideration of this legislation."

Chairman Wheeler of the Senate committee on interstate commerce, after a conference with Chairman Rayburn of the House committee on interstate and foreign commerce, told newspaper men that the legislation would be "vigorously pressed" if the railroad managements and labor organizations failed to agree upon a voluntary plan, although he said he would

much prefer to see the two sides get together.

Further conferences between the railroad and labor committees in Washington failed to develop results but because of the President's vacation plan no arrangement was made for a joint conference with him and the conferences were again shifted to New York.

\$196,677,899 for Rivers and Harbors

The Senate on March 23 passed the War Department appropriation bill, including \$196,677,899 for rivers and harbors projects, after voting not to reconsider its action of the week before in voting down an amendment to include an item of \$12,000,000 for continued work on the Florida ship canal.

Claim Payments

Claims paid by railroads for damage or loss on fresh vegetables during 1935 were again greater than those on any other commodity, totaling 15.6 per cent of the \$17,496,049 paid on all commodities. Fresh fruits, except citrus, totaled 8 per cent; live stock, 6.8 per cent; new furniture, 5.5 per cent; and coal and coke, 4.4 per cent. Of the \$5,433,968 paid for loss and damage of fresh fruits, melons and vegetables, that paid on lettuce totaled 13.9 per cent; that on watermelons, 8.3 per cent; that on grapes, 7.7 per cent; and on apples, 6.8 per cent.

During the year, 77.9 per cent of the claims paid, declined or withdrawn were settled within 30 days, 14.4 per cent between 30 and 90 days and 7.7 per cent after 90 days. Of the 2,048,153 claims received or reopened during the year, 1,684,992 were paid and 208,093 were withdrawn.

Summer Trip Proposed for Senators

Senator Shipstead, of Minnesota, has introduced in the Senate a resolution proposing that the committee on interstate commerce, or any sub-committee thereof, be authorized and directed to make a study, either in the United States or abroad, of ocean, rail, inland waterway, and truck and bus transportation in the several European countries, "with a view to determining to what extent and in what manner such transportation is subjected to government regulation, the effectiveness of such regulation, and the effect of such regulation upon such transportation, and upon the level of rates, fares, and charges paid by the public, and the measure of co-ordination, if any, between the various transportation agencies." A blank was left in the resolution for the amount of the expense to be authorized.

Receipts and Bills of Lading for Motor Carriers

Section 219 of the motor carrier act requires common carriers of property by motor vehicle to issue a receipt or bill of lading for any property received for transportation by them in interstate or foreign commerce. The Interstate Commerce Commission after receiving numerous inquiries regarding the proper form and contents of such receipts and bills of lading has issued a notice that such carriers, in order to comply with the requirements, must provide and have ready for use on and after April 1 appropriate forms of receipts or bills of lading, the contents and provisions of which must be just and reasonable. The responsibility for including any unlawful conditions or provisions in receipts or bills of lading rests with the carriers. If experience proves that it is necessary for the commission to take action in this matter, conferences and formal hearings may be held at which interested parties will have an opportunity to present their views.

A bill of lading may not contain any condition or provision which purports to limit the liability of a common carrier of property by motor vehicle for any loss, damage or injury to the property transported, unless such carrier has been previously authorized by the commission, after application, to establish and maintain rates dependent upon the value declared or agreed upon in writing as the released value of the property.

Stanley and Westinghouse Honored by Electrical Industry

Tin-type plates were used by William Stanley, in 1885, to make the cores of transformers for demonstrating the potentialities of the alternating-current power system (which is now used to supply 95 per cent of the world's electric power). The early pioneering of this system, by Stanley and George Westinghouse, and its subsequent development, was outlined in graphical manner before an audience of 500 members and guests of the American Institute of Electrical Engineers in New York and at nearly half a hundred similar gatherings throughout the country, on Friday, March 20.

F. A. Merrick, president, Westinghouse Electric & Manufacturing Company, spoke on the relation of electrical development to business. Gano Dunn, president, J. G. White Engineering Corporation, traced electrical progress in the New York area. Bancroft Gherardi, vice-president and chief engineer, American Telephone & Telegraph Company, paid tribute to Stanley

THE SUPERHEATER COMPANY

NEW YORK



CHICAGO

THE ELESKO EXHAUST STEAM INJECTOR IS LIGHT IN WEIGHT

SIMPLE • RELIABLE • ECONOMICAL



NEW YORK
60 East 42nd St.

MONTREAL
The Superheater Co., Ltd.
Dominion Square Bldg.

CHICAGO
Peoples Gas Bldg.

REPRESENTATIVE OF AMERICAN THROTTLE COMPANY, INC.

and Westinghouse, and also to Feraday, Henry, Edison, and "thousands of others" who have brought the industry to its present status. Charles W. Appleton, vice-president, General Electric Company, dramatized the growth of the industry, and showed how events molded its course. F. W. Smith, president, Consolidated Gas Company, New York, acted as toastmaster.

Beginning with a demonstration by Stanley, at Great Barrington, Mass., in March, 1886, the alternating current system was developed in the face of much difficulty, since it was opposed by accepted scientific opinion, which favored direct current. In the Great Barrington installation, a 25-hp. steam engine was used to drive a 500-volt, 12-amp. generator. The No. 6 transmission wires were supported by insulators nailed to the elm trees along the street, and transformers were installed in the cellars of the buildings to be lighted. The transformers were built at the Westinghouse plant in Pittsburgh, and were housed in wooden boxes and kept locked. Facilities were extended to light 13 stores, two hotels, two doctors' offices, a barber shop and the telephone and post offices. The lamps used were of 150, 50 and 16 candle-power size. In the United States today, the capacity of generating stations is approximately 34,000,000 kilowatts, and there are yet no limits in sight to curtail the expansion of electric service.

Electric Lines Subject to Labor Act

The Interstate Commerce Commission, Division 3, has issued reports finding that the Salt Lake & Utah and the Utah Idaho Central are not street, interurban, or suburban electric railways within the exemption proviso of section 1 of the railway labor act.

Correction

In the article entitled "The Florida Hurricane," in the March 7 issue of the *Railway Age*, it was stated that the Florida East Coast has a small interest in the Pan-American Airways. This was in error, as the Florida East Coast has no interest in the Pan-American Airways.

Atlantic States Shippers' Board

The Atlantic States Shippers' Advisory Board will hold its regular meeting at Traymore Hotel, Atlantic City, on Thursday and Friday, April 2 and 3, Thursday being given up to committee meetings, and the regular main session to be started at 9:30 a.m. on Friday. The principal speaker at the luncheon on Friday noon will be M. W. Clement, president of the Pennsylvania.

Frisco Establishes Clearing House for Ideas

The St. Louis-San Francisco, in an effort to benefit by the suggestions from its 16,000 employees, has made arrangements for the consideration of these suggestions, the plan being known as the Forward Frisco Plan. Ideas, suggestions and criticisms are to be received at a central office in St. Louis, where they will be studied and turned over to appropriate officers for detailed consideration. In announcing

the plan, J. M. Kurn, trustee, said, "There is a challenge to every railroad man and woman in the present and future outlook for transportation. Many forces are pushing forward and there must be vast improvements in every department of railroading if we are to preserve our place in the transportation scheme. It is up to the co-ordinated ideas of employees to keep railroads abreast of the times."

Pacific Railway Club Officers

The Pacific Railway Club has elected the following officers for the ensuing year: President, Roy W. Hunt, fuel supervisor of the Atchison, Topeka & Santa Fe; first vice-president, Homer Bryan, locomotive engineer of the Western Pacific; second vice-president, Stuart Daggett, professor of transportation of the University of California; and treasurer, William P. St. Sure, vice-president of the East Bay Street Railways, Ltd., and the Key System.

Causes of Government Ownership Abroad

Some of the Causes of Government Ownership Abroad is the title of a 24-page booklet issued by the Committee on Government Ownership, Division on Research of the Transportation Association of America, Chicago. The book cites the reasons for government ownership in Great Britain, Belgium, Italy, Germany, Austria - Hungary - Czechoslovakia, Russia, France, Africa and South America, and, in conclusion, lists 10 forms of government ownership and 8 reasons for government ownership.

R. R. Credit Corporation Announces Additional Distribution

The Railroad Credit Corporation on March 31 will make its twenty-fifth liquidating distribution to participating carriers, amounting to \$735,881, or 1 per cent of the contributed fund. Of this amount \$387,143 will be paid in cash and \$348,738 will be credited on carriers' indebtedness to the corporation. This will bring the total amount distributed since liquidation began June 1, 1933, to 42 per cent of the fund or \$30,906,990. Of this total amount \$14,367,738 will have been returned in cash and \$16,539,252 in credits.

Rerouting of New England Traffic Authorized Because of Floods

Because of the flood situation in New England the Interstate Commerce Commission, Division 3, on March 21 issued Service Order No. 56 directing the New England railroads and their connections to forward traffic by routes most available to expedite its movement and prevent congestion, without regard to the routing made by shippers or connecting carriers or to the ownership of the cars, and suspending all rules, regulations, and practices with respect to car service that may conflict with these directions.

Georgia Passenger Fares Found Not Unduly Discriminatory

Passenger fares and charges lower than the interstate basis required by the Georgia Public Service Commission to be maintained within the state were found not

shown to be unduly prejudicial to persons and places in interstate commerce or unduly discriminatory against interstate commerce in a decision made public by the Interstate Commerce Commission after an investigation on petition of the railroads. The Georgia commission in 1934 after a hearing prescribed a maximum passenger fare rate of 2 cents a mile for intrastate service in Georgia at a time when the authorized interstate rate was 3.6 cents a mile but the railroads had in effect experimental rates ranging from 1.5 to 3 cents. The federal commission found that the evidence fell short of showing a real and substantial discrimination.

Steam Railway Accident Statistics December, 1935

The Interstate Commerce Commission completed statistics of steam railway accidents for the month of December, 1935, now in preparation for the printer, will show:

Item	Month of December 1935	December 1934	12 months ended with December 1935	12 months ended with December 1934
Number of train accidents	654	532	6,551	6,023
Number of casualties in train, train-service and non train accidents:				
Trespassers:				
Killed	142	150	2,712	2,654
Injured	142	164	3,030	3,156
Passengers on trains:				
(a) In train accidents:				
Killed	....	....	1	12
Injured	16	83	367	394
(b) In train-service accidents:				
Killed	....	....	17	15
Injured	150	129	1,505	1,476
Travelers not on trains:				
Killed	....	....	8	12
Injured	73	81	645	684
Employees on duty:				
Killed	63	50	555	526
Injured	1,540	1,478	16,348	16,990
All other non-trespassers:				
Killed	235	189	1,814	1,660
Injured	799	671	6,185	5,931
Total—All classes of persons:				
Killed	440	389	5,107	4,879
Injured	2,720	2,606	28,080	28,631

* Train accidents are distinguished from train-service accidents by the fact that the former cause damage of more than \$150 to railway property.

† Casualties to "Other non-trespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and non-trespassers, were as follows:

Number of accidents	525	444	3,933	3,728
Persons:				
Killed	220	177	1,680	1,554
Injured	606	525	4,658	4,300

New York Truckers Continue Fight on Storedoor Service

Rumors of a possible strike of New York motor truck owners and drivers as a protest against the l.c.l. pick-up and delivery services to be offered by eastern railroads generally April 1 have been heard in that city recently. Unless the Interstate Commerce Commission suspends the proposed tariffs, it was reported that a demonstration involving a suspension of local trucking activity may result.

The commission was urged to suspend the storedoor tariffs for investigation in a resolution adopted at a mass meeting of New York truckers on March 24. Another resolution approved at the meeting asked Mayor La Guardia to join in the protest.

Meanwhile the Merchant Truckmen's



EXPEDITE TO-DAY'S INCREASED TRAFFIC

WHEN traffic conditions demand increased interlocking facilities, install the modern type "Union" Power Interlocking machines. They are built to give a long life of efficient expedited service, free from petty maintenance problems. "Union" Power Interlocking machines are still efficiently functioning after many years of reliable service, the oldest of which has been in service over 44 years. Others have given 28 and 30 years service and are still good for many more. » »

Whether it be a large terminal or isolated small outlying interlocking, "Union" Power Interlockings will assure a long life of economical and efficient service. » » » » » » » »

Our nearest district office will be glad to furnish details. » » » » » » » »

A FEW "UNION" POWER INTERLOCKING FEATURES:

1. Simplicity
2. Sturdy construction
3. Economy
4. Long life
5. Reliability
6. Compactness, saves tower space because many functions may be operated from one lever.



Union Switch & Signal Co.

SWISSVALE, PA.

NEW YORK

MONTREAL

CHICAGO

ST. LOUIS

SAN FRANCISCO

Bureau of New York has been running newspaper advertisements charging that "local truckmen, who have never been in competition with the railroads, face ruin." The advertisements further contend that the proposed 5 cents per 100 lb. allowance for shippers performing the pick-up and delivery themselves is too low to permit shippers to employ local truckmen for this work on a compensatory basis.

G. C. Lucas Discusses Long-and-Short-Haul Clause

Repeal of the long-and-short-haul clause of the interstate commerce act was advocated in an address delivered at the March 19 meeting of the Traffic Club of New York by George C. Lucas of the National Publishers Association. Mr. Lucas, who is first vice-president of the club, substituted for Representative Pettengill of Indiana, sponsor of the long-and-short-haul clause repeal bill now before Congress, who was unable to be present. The speaker endeavored to present Representative Pettengill's views on the subject but he nevertheless gave his personal endorsement as well.

New England Shippers' Board

The New England Shippers' Advisory Board held its annual meeting at Boston, on March 20, with an attendance of about 300. The commodity committees were very optimistic, though two committees anticipated a decrease in railroad tonnage, as compared with the second quarter of last year. Six committees anticipate no change and the other 35 expect varied increases which produce an average expected increase of 4.38 per cent.

E. L. Hefron spoke at length on the new motor-truck bills. He believes that the regulations will have a marked stabilizing effect on the motor traffic industry. Vice-President F. J. Wall, of the New York, New Haven & Hartford, told the meeting what might be expected from the store-door delivery freight service, which is to go into effect on April 1.

Government Ownership

Government ownership of the railroads will be the first step in a socialized state and will spell the beginning of the end of our present economic system, according to Raynard F. Bohman, general traffic manager of the Heywood-Wakefield Company, and chairman of the National Committee for the Prevention of Government Ownership of the Railroads of the National Industrial Traffic League, in an address before the Traffic Club of Chicago at the Palmer House, on March 20. He said the prospect of government ownership was an imminent danger because most people, business men included, were unconsciously promoting it. The danger of government ownership, he continued, had never come from its open advocacy but from policies designed to destroy the earning capacity of the railroads under private ownership. The conclusion that such things as the six-hour day law and the limitations of train lengths would make work is unwarranted, he pointed out, because an increase in railroad expenses would require a corresponding increase in freight rates, with the result that

industry would be localized and railroads will have less business to handle, and fewer men will be employed.

"The duties imposed on the government," he continued, "have already grown to vast proportions. To add the burden of operating the railroads would be to invite disaster. Persons now in the service of the government number over a million. If to this number we add all employees in the service of the railroads, then, properly, organized, they could dictate the policy of the government. We would have created a gigantic despotism controlling the well-being of our whole people."

Mr. Bohman suggested a 12-point program to put the railroads back in sound financial and operating conditions under private ownership and management. These points included an increase of tonnage on the railroads by shippers, opposition to restrictive legislation and the abolition of work rules that mean payment for services not rendered, abolition of special low land-grant railroad rates to the government, sharing of the expense of grade crossing protection by vehicles other than railroads, assumption by railroad management of a more definite policy in dealing with organized railroad labor, cessation of the subsidizing of waterways and a change of view on the part of railroad management.

Equipment and Supplies

LOCOMOTIVES

THE ALTON & SOUTHERN is inquiring for a locomotive of the 2-8-2 type.

FREIGHT CARS

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 500 box cars, 200 low side gondola cars, and 50 flat cars, all of 50 tons' capacity, 25 gondola cars of 70 tons' capacity, and two steel underframe flat cars of 100 tons' capacity.

PASSENGER CARS

THE CHICAGO, ROCK ISLAND & PACIFIC has given a contract to the American Car & Foundry Company to modernize seven chair cars.

IRON AND STEEL

THE BELT RAILWAY OF CHICAGO has ordered 800 tons of rails from the Carnegie-Illinois Steel Corporation.

MISCELLANEOUS

CANADIAN PACIFIC.—An order has been placed with The Timken Roller Bearing Company, Canton, Ohio, for Timken bearings and boxes to completely equip all journals of four mail and express cars which the National Steel Car Company, Hamilton, Ontario, is building for this railroad.

Construction

ATCHISON, TOPEKA & SANTA FE.—This road plans to start construction of its proposed line between Boise City, Okla., and Los Animas, Col., 111 miles, as soon as contracts can be awarded and materials assembled. This line will comprise part of through route between Amarillo, Tex., and points in Colorado, that part of line between Amarillo and Boise City, 121 miles, having been completed in 1931.

LEHIGH VALLEY.—A petition of this road to reopen the proceedings for the elimination of the Dingens street crossing in Buffalo, N. Y., has been denied by the New York Public Service Commission. The commission directed the elimination of this crossing recently at an estimated cost of \$221,000, exclusive of land and property damages. See *Railway Age*, January 18, page 161.

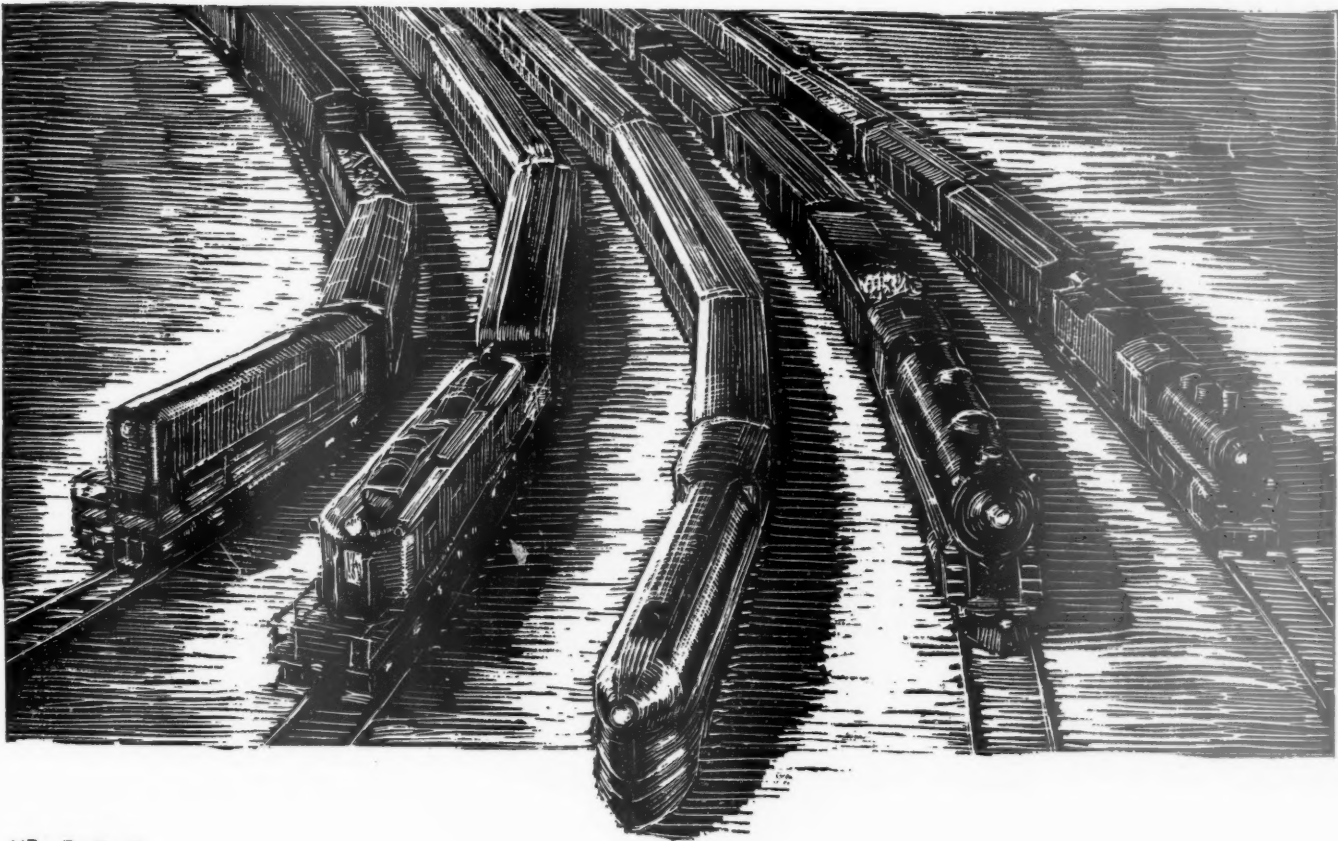
NEW YORK CENTRAL.—In connection with the grade crossing elimination work on this road in Syracuse, N. Y., the New York Public Service Commission has approved bids for the construction of a railway express building, a car facility building, two car inspector buildings, two station houses and for the installation of the mechanical and electrical facilities in the vicinity of the passenger station. The commission has approved all the bids as not excessive and directed the railroad to award the necessary contracts and begin the work as soon as possible. The low bids were: Duffy Construction Corporation, New York, who offered to construct the railway express building for \$230,731; the Gorsline & Swan Construction Company, Rochester, to construct the car facility building, the two car inspector buildings, the two section houses and other miscellaneous work for \$114,161; and the Edward Joy Company, Syracuse, to install the mechanical and electrical facilities in the vicinity of the passenger station, for \$236,340. See *Railway Age*, March 7, page 415.

ST. LOUIS-SAN FRANCISCO.—A contract has been awarded to Fairbanks, Morse & Company, Chicago, for the construction of a 200-ton reinforced concrete locomotive coaling station at Amory, Miss. The station will be equipped with electrically-operated automatic skip hoist elevating equipment.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—The St. Louis (Mo.) Board of Public Service will receive bids at noon on April 10 on the fabrication and delivery of the steel for the superstructure of the South Valley Junction Railroad approach to the St. Louis Municipal bridge across the Mississippi river between St. Louis, Mo., and East St. Louis, Ill. The estimated cost of this work is \$68,000. Bids are also to be taken at the same time on the erection and painting of the steel for this approach, estimated cost \$20,000, and also on the furnishing and delivering of various railroad track materials for use on the bridge and its approaches. The total estimated cost of these materials is \$291,900.

Continued on next left-hand page

THE STAGE IS READY



"W E have long been equipped, not only on the manufacturing but also on the research and designing side, to supply all of the power needs of our customers, whether they be for steam, electric, or Diesel-electric units.

Without the least question, each of these three major power units — steam, electric and Diesel- or oil-electric — has, and will continue to have, its place in our swiftly changing railroad transportation picture as a whole.

At once I wish here to say that I personally feel a profound sense of gratitude to those roads and designers and manufacturing concerns serving them who approached the railroads' difficult passenger problem with a fresh viewpoint, made full use of all available contributions of science, produced the Union Pacific's M-10001 and the Burlington's Zephyr, stimulated the production of other trains likewise new in kind, sensationally focused public

attention on the railroads, and made them aware of public emphasis on speed, comfort, and all else that goes to increase the desirability of traveling by rail. These roads and these other pioneers, in my judgment, ought to be awarded Congressional Medals of Honor for the service they have rendered in energizing a new era in railroad travel!

We have three power units, instead of two, to work with.

Without question we are entering upon an era certain to be characterized by extensive replacements as distinguished from repair, notably of passenger power units and passenger equipment, to the end that our roads can regain lost passenger traffic by providing the fastest, safest, most comfortable overland transportation. . . . The stage is ready."

From an article in Scientific American, April, 1935 by William C. Dickerman

AMERICAN LOCOMOTIVE COMPANY

ALCO

360 CHURCH STREET NEW YORK, N.Y.

Supply Trade

Braman, Dow & Co., Boston, Mass., have been appointed dealer agents in the Boston area for the **General Refractories Company**, Philadelphia, Pa.

USL arc welding equipment is now manufactured and sold by **Owen-Dyneto Corporation**, Syracuse, N. Y., a subsidiary of **Electric Auto-Lite**. The entire engineering staff and manufacturing machinery and equipment have been moved from Niagara Falls, N. Y., to Syracuse, N. Y. **J. L. Fosnight** has been appointed sales manager, welder division, Owen-Dyneto Corporation.

The **Foote Bros. Gear & Machine Corporation** has taken over all activities and assets of Foote Bros. Gear & Machine Company, Chicago, completing the reorganization and consolidation of its activities. The officers are, as follows: **Franklin H. Fowler**, president and general manager; **W. A. Barr**, vice-president in charge of manufacturing; **F. A. Emmons**, vice-president in charge of sales and **J. R. Fagan**, secretary and treasurer.

Harold T. Henry, eastern district sales manager of the Q & C Company, New York, has resigned effective April 1 to become manager of railroad sales of the **Burden Iron Company**, Troy, N. Y. Mr. Henry was born at Fishkill, N. Y., in 1898, and was educated in high school and later graduated from Morrisville College.



Harold T. Henry

Morrisville, N. Y. He served for 16 years with the Q & C Company in various capacities, including inspection work, advertising, shop work and also assisted in the development and sales of several railroad devices both in the mechanical and maintenance departments of the railroads. Previous to that time he was connected with the United States Air Corps test department.

American Locomotive Company Annual Report

The American Locomotive Company for the year ended December 31, 1935, reported a loss of \$1,421,289 after all charges, as compared with a 1934 loss of \$2,071,826. During 1935 the company received orders

for 35 locomotives, 20 of which were purchased by Canadian roads. On January 1, 1936, it had on its books unfilled orders for 19 locomotives and other work amounting to \$4,262,937, as compared with \$2,703,374 on January 1, 1935.

The company's current position continues unusually strong with its balance sheet at the close of last year showing net quick assets of \$12,745,896. Also, it had neither funded debt nor loans payable.

In commenting on prospects for future business, President William C. Dickerman notes the 1930-1934 decline in railway expenditures for maintenance of equipment, as compared with the 1920-1929 average, stating that this curtailment was accomplished "largely by the intensive use of limited numbers of strictly modern power units." This situation, he continues, "emphasizes the urgency of new replacement programs in the near future." Also, Mr. Dickerman reveals that the company received during the first six weeks of this year orders for 24 new locomotives and he anticipates that any further increase in carloadings should have the effect of stimulating additional purchases.

The consolidated income and surplus accounts for the year ended December 31, 1935, follow:

CONSOLIDATED INCOME ACCOUNT	
Net loss after deducting manufacturing, maintenance and administrative expenses	\$776,973
Depreciation on plants and equipment	644,354
	\$1,421,327
Federal Capital Stock tax	50,145
Loss before adjustments	\$1,471,472
Income represented by appreciation in the market value of securities previously written down	50,183
Loss for the year	\$1,421,289
CONSOLIDATED SURPLUS ACCOUNT	
Surplus, December 31, 1934	\$13,539,471
Reserve of subsidiary company no longer required, restored to surplus	\$300,000
Less additional reserves created by parent company for contingencies and other items	300,000
Loss for the year ended December 31, 1935	1,421,289
Surplus, December 31, 1935	\$12,118,182
Earned Surplus	\$7,939,933
Capital Surplus	4,178,249

OBITUARY

Alfred W. Carlisle, who retired as treasurer of the Illinois Steel Company in 1931, died in Evanston, Ill., on March 12.

Willard E. Hauser, president of the Grant Smith Company, Seattle, Wash., railway contracting firm, died recently at Minneapolis, Minn., of a heart attack.

Clarence J. Olmstead, who retired in 1931 as assistant to the president of the Westinghouse Air Brake Company, died at Miami, Fla., on March 23.

George G. Crawford, who retired as president of the Jones & Laughlin Steel Corporation in May, 1934, and who was president of the Tennessee Coal, Iron & Railroad Company prior to 1930, died in Birmingham, Ala., on March 20.

Financial

CHESAPEAKE CORPORATION.—Correction.—Under the operation of the sinking fund for this company 5 per cent bonds due 1947, a total of \$1,085,000 of the bonds have been drawn for redemption May 15. As provided in the indenture, holders of these bonds drawn by lot up to and including May 15 may convert them into common stock. In the *Railway Age* of March 14 this sinking fund operation was erroneously attributed to the Chesapeake & Ohio.

CHICAGO & NORTHWESTERN.—Abandonment.—The trustees have applied to the Interstate Commerce Commission for authority to abandon a branch line from Deloit, Ia., to Denison, 6.16 miles.

LEHIGH & HUDSON RIVER.—Preliminary Report.—The preliminary report of this company for 1935 shows net income of \$223,813, after interest and other charges, as compared with net income of \$184,337 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
RAILWAY OPERATING REVENUES	\$1,493,250	\$1,447,588	+\$45,662
Maintenance of way	152,105	173,020	-20,914
Maintenance of equipment	228,417	239,646	-11,228
Transportation	516,365	487,801	+28,563
TOTAL OPERATING EXPENSES	1,013,308	1,025,870	-12,561
Operating ratio	67.9	70.9	-3.0
NET REVENUE FROM OPERATIONS	479,942	421,718	+58,223
Railway tax accruals	133,421	123,608	+9,813
Hire of equipment	91,347	83,739	+7,607
Joint facility rents	62,375	62,648	-273
NET RAILWAY OPERATING INCOME	192,796	151,689	+41,106
Non-operating income	31,600	33,588	1,988
GROSS INCOME	224,396	185,278	+39,118
TOTAL DEDUCTIONS FROM GROSS INCOME	582	941	-358
NET INCOME	\$223,813	\$184,337	+\$39,476

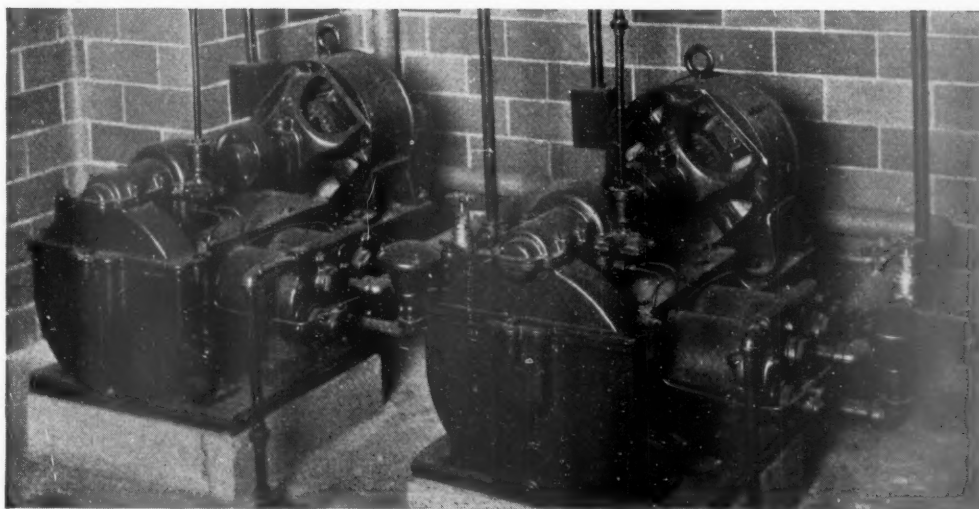
LOUISVILLE & NASHVILLE.—Bonds.—Division 4 of the Interstate Commerce Commission has authorized this company to procure the authentication and delivery of \$30,000,000 of first and refunding mortgage 4 per cent bonds, series D, and to exchange them for a like amount of 4½ per cent bonds now in the treasury. The company also was authorized to sell \$9,292,000 of the bonds at 98 and interest, the proceeds to be used with other treasury funds to retire on August 1, \$9,292,000 of 5 per cent consolidated mortgage bonds of the South & North Alabama. A sinking fund is to be provided for the series D bonds under an indenture requiring the company to make annual payments into the fund of sums equal to either one half of one per cent of the bonds issued or to the net income for the year ending December 31, whichever is less. The bonds are to be sold to Morgan, Stanley & Co., Inc.

PENNSYLVANIA.—Acquisition.—This company and the Philadelphia, Baltimore & (Continued on page 561)

For Every Pneumatic Need

NOT only on locomotives for brake operation, but in shops for pneumatic tools — in power houses for cleaning purposes — in yards for train charging and car retarders — in signal towers for switch operation — in wood preserving plants for the high pressure method of tie treating — compressed air is being supplied by Westinghouse compressors. . . They are compact, efficient, reliable, and durable — characteristics that distinguish Westinghouse apparatus.

WESTINGHOUSE AIR BRAKE COMPANY
General Office and Works . . . Wilmerding, Penna.



(9132)

WESTINGHOUSE AIR COMPRESSORS

ANNUAL REPORT OF PULLMAN INCORPORATED AND ALL SUBSIDIARIES For Fiscal Year 1935

CONSOLIDATED BALANCE SHEET DECEMBER 31, 1934 AND 1935

ASSETS		1934	1935
CURRENT ASSETS:			
Cash		\$ 16,729,740.63	\$ 13,434,847.37
U. S. Government Securities (1935—Market value \$14,124,835.32)		19,037,436.52	13,184,463.06
Accounts and Notes Receivable		6,606,650.49	7,497,095.30
Equipment Trust and Other Deferred-Payment Car Accounts		14,054,893.22	11,559,630.88
Marketable Securities (1935—Market value \$2,164,738.63)		2,360,254.44	1,926,834.25
Inventories at Cost		10,686,021.78	12,808,057.36
		<u>\$ 69,474,997.08</u>	<u>\$ 60,410,928.22</u>
INVESTMENT IN AFFILIATED COMPANIES AND OTHER SECURITIES AT COST			
		4,145,659.27	4,113,316.34
SPECIAL DEPOSITS WITH VARIOUS STATES UNDER COMPENSATION ACTS			
		124,029.26	176,382.13
RESERVE FUND ASSETS:			
U. S. Government Securities held to fund Pension and Insurance Reserves		8,026,580.98	8,505,340.37
DEFERRED CHARGES APPLYING TO FUTURE OPERATION OF THE PROPERTIES			
		557,557.52	974,931.33
		<u>\$ 82,328,824.11</u>	<u>\$ 74,180,898.39</u>
EQUIPMENT AND PROPERTY:			
Balance, beginning of Year		\$356,881,295.70	\$362,021,620.91
Additions during Year		7,243,497.37	13,282,284.88
		<u>\$364,124,793.07</u>	<u>\$375,303,905.79</u>
Less:			
Retirements during Year		2,103,172.16	10,813,683.18
		<u>\$362,021,620.91</u>	<u>\$364,490,222.61</u>
DEDUCT			
Depreciation Reserves:			
Balance, beginning of Year		\$165,138,576.46	\$175,912,694.07
Additions during Year		11,993,240.27	13,190,893.91
		<u>\$177,131,816.73</u>	<u>\$189,103,587.98</u>
Less: Charges on Account of Retirements during Year		1,219,122.66	9,023,021.56
		<u>\$175,912,694.07</u>	<u>\$180,080,566.42</u>
Balance, end of Year, less Depreciation Reserves		<u>\$268,437,750.95</u>	<u>\$258,590,554.58</u>
LIABILITIES			
CURRENT LIABILITIES:			
Current Accounts Payable and Payrolls		\$ 6,559,993.56	\$ 7,900,726.24
Accrued Taxes, not yet due, including Provision for Federal Income Tax		3,952,524.32	3,296,071.55
		<u>\$ 10,512,517.88</u>	<u>\$ 11,196,797.79</u>
RESERVES:			
Pension and Insurance Reserves		\$ 8,308,862.25	\$ 8,628,790.14
Reserve for Contingencies		3,350,000.00	3,350,000.00
Other Reserves		2,922,704.89	3,145,182.81
		<u>\$ 14,581,567.14</u>	<u>\$ 15,123,972.95</u>
DEFERRED CREDITS APPLYING TO FUTURE OPERATION OF THE PROPERTIES			
		\$ 1,416,635.20	\$ 1,695,478.13
CAPITAL STOCK:			
	SHARES	1934	1935
Pullman Incorporated			
Authorized		3,875,000.000	3,875,000
Unissued*		199,444	485
Issued—			
At stated value of \$50 per share		3,874,800.556	3,874,515
Rescued—			
(In Treasury) at stated value of \$50 per share		54,328.000	54,335
Outstanding—			
At stated value of \$50 per share		3,820,472.556	3,820,180
The Pullman Company (a subsidiary)			
Outstanding—			
At par value of \$100 per share		99,722	88,105
		<u>\$191,033,600.00</u>	<u>\$191,017,810.50</u>
SURPLUS:			
Excess of value of property acquired by issue of shares of capital stock over the stated value of \$50 per share, less subsequent write-downs on said property out of this surplus as authorized by the Board of Directors		\$ 89,609,358.00	\$ 88,634,168.35
Net profits earned since April 30, 1927 (date of re- organization)		58,213,875.48	57,940,147.57
		<u>\$147,823,233.48</u>	<u>\$146,574,315.92</u>
DEDUCT: Dividends paid during the period from April 30, 1927 to date		96,989,802.75	107,017,820.71
		<u>\$ 50,893,430.73</u>	<u>\$ 39,556,495.21</u>
Balance, at December 31		<u>\$268,437,750.95</u>	<u>\$258,590,554.58</u>

* Balance of shares originally reserved for exchange of shares of Pullman Incorporated for shares of The Pullman Company. Due to alteration in the basis of exchange after May 1, 1929, subsequent exchange to December 31, 1934 resulted in a surplus of 485 shares above the amount necessary to provide for future exchange of stock of The Pullman Company still outstanding. These surplus shares, included as "outstanding" in previous annual statements of the Capital Stock account, have been reclassified as "unissued" in the 1935 statement of that account.

TO THE STOCKHOLDERS

OF PULLMAN INCORPORATED:

The results of operation of your Company for the fiscal year ended December 31, 1935, and financial condition as of that date, are presented in the accompanying statements.

The Income Account shows a net loss of \$273,727.91 (7 cents per share) in 1935 as contrasted with an earning of \$2,957,669.69 (76 cents per share) in 1934.

* * *

Investment over the last three years of approximately \$21,500,000 in air conditioning installations is being amortized on a basis that will return the mass of this investment during the course of the next five years, with corresponding strengthening of the current asset position. The drain on cash during 1936, for continuance of the air conditioning program, will be substantially less than in 1935.

* * *

1935 Operations

The outstanding features of 1935 operations in the major lines of business activity carried on by your Company and its subsidiaries were:

Loss of \$1,646,980.51 in the sleeping car business—notwithstanding expansion of \$2,234,443 in Gross Revenue—as contrasted with an earning of \$597,355.64 in 1934; due (a) to considerably enlarged scale of ordinary maintenance expenditure, (b) to special maintenance charges arising in connection with the 1935 air conditioning program and (c) to increased payroll costs resulting from complete restoration of the pre-1932 wage level for all rail carrier employees.

Earning of \$228,717.22 in the manufacturing business as compared with an earning of \$1,292,591.41 in 1934, when under the stimulus of large-scale Government loans to the railroads substantially larger new car orders were placed than in 1935.

Contraction of \$386,527.56 in the earning from Security Investment, reflecting some decline in interest rate but principally the absence of interest earning on securities that were sold or collected at maturity during the year and the proceeds used to finance additions to Equipment and Property.

Sleeping Car Business

While Gross Revenue of \$46,758,260 represented recovery of 18.9% from the depression-low reached in 1933, it was nevertheless equivalent to only 57% of the pre-depression (1925-9) averages. With substantially the same burden of property depreciation to be carried as during periods of normal Gross Revenue and with impracticability of reducing property maintenance and a country-wide operating organization in direct ratio with the shrinkage in volume of traffic, it is manifest that normal ratios of earning cannot be obtained with a 57% load factor.

An important element in the 1935 improvement in Gross Revenue was the heightened rate of increase in traffic volume in the Western and Southern regions, where a reduced fare program adopted late in 1933 provided for entire elimination of the surcharge on Pullman tickets and for substantial lowering in the basic rail passenger rates. This contrasted with a much lower rate of increase in the volume of Pullman traffic in those regions where the Pullman surcharge has been continued in effect and where there has been no general reduction in the over-all cost of rail travel.

The Interstate Commerce Commission has had under way for more than a year a general investigation of rail passenger rates and arrangements, and has just handed down (on February 28, 1936) a decision ordering elimination of the surcharge on Pullman tickets and prescribing maximum rail fares, 2 cents a mile in coaches and 3 cents in Pullman cars, one way, with authority to the railroads to provide in the new tariffs to be filed under this order the needed schedules of round trip and special rates within these limits.

The actual rate schedules that will be developed under the Commission's decision, to be placed in effect June 2, 1936, are not yet known and when made will reflect the railroad opinion on the important question of what, if any, differential rates should be charged for transportation in the various classes of equipment (coaches, tourist sleeping cars, standard sleeping and parlor cars.) If there now develops out of the Commis-

sion's decision a well balanced and attractive schedule of rail passenger rates, without repressive differential charges against the use of the sleeping and parlor car services, there will be opportunity for a vigorous campaign to restore passenger travel to the rails. In this campaign an attack can be successfully waged on five major fronts: COST, SAFETY, SPEED, DEPENDABILITY and COMFORT. All of these elements have strong appeal, and the rail-Pullman service is better equipped to furnish them in balanced and effective form than any other single form of transportation by land, air or water.

Reflecting the heaviest volume of winter travel since the depression began, there has been continued improvement in Pullman Gross Revenue through January and February of 1936, running at about 14% above the 1935 level. Pullman travel is especially sensitive to business conditions, and with the present outlook for continued improvement in business generally there is reasonable expectation that Pullman revenue will continue to run ahead of corresponding periods in 1935, if not injuriously affected by new passenger rate schedules set up under the recent Commission decision. However, the possibilities of new charges in connection with the Social Security and Railroad Retirement Acts, as well as of increases in unit costs of the ordinary operating expense elements, may also seriously affect any earning expectation projected from increased revenue.

* * *

The favorable reaction of the traveling public to the improved rail services available in 1935 encourages the hope for continued increase in travel volume during the current year, for which there is planned substantial expansion in the number of air conditioned Pullman cars in operation, further refinements in service and improvement in equipment, and continued acceleration of train schedules, with the prospect of substantial reduction in travel costs.

During 1936 there will be placed in operation between important traffic points several additional new-type lightweight high-speed trains. The trains of this type planned for over night runs will carry sleeping cars, and it is expected that these improved services will generate or recover a substantial amount of rail passenger business.

Manufacturing Business

While equipment bookings in 1935 were smaller than in the previous year, the commercial carbuilders entered 1936 with the brightest prospect in several years for early resumption of large-scale equipment purchases. Placement since December 1st with railroad and commercial shops, of orders for approximately 19,000 new freight cars, was undoubtedly hastened by the sharp expansion in carloadings and scarcity of high-grade cars during the last half of 1935. This tight equipment situation will recur in intensified form if traffic reaches the volume anticipated for 1936. Greatly improved designs of freight equipment are now available, and the obtainable economies both in maintenance and in relation of capacity to deadweight add to the inducements of equipment buying by the railroads.

Your Company's manufacturing and export subsidiaries obtained a fair proportion of the subnormal volume of equipment orders placed during 1935. On illustrated insert accompanying this report there will be seen examples of new types of passenger and freight equipment produced at your manufacturing subsidiaries' plants. The engineering and research divisions of your subsidiary companies have been progressive and active in their development of improvements in car design and methods of construction and in furthering the application of new materials in car building. The manufacturing plants have been maintained in good physical condition, and adequate organization is available for expansion of operations promptly upon appearance of demand for production of new equipment.

Equipment and Property, Additions and Retirements

During 1935 there were gross additions to Property and Equipment Account, classified as follows:

Air conditioning apparatus in cars.....	\$11,337,978.54
Routine additions and betterments to cars.....	44,764.66
New and rebuilt cars.....	1,160,500.00
Improvements at laundries, shops, district offices, etc.	587,573.94
Improvements at manufacturing plants.....	151,467.74
	<u>\$13,282,284.88</u>

Less: Retirements of cars and other property.....

Net addition

* * *

At the close of 1935 there were available to the traveling public 3,238 air conditioned Pullman cars, out of an estimated total of 5,875 air conditioned passenger cars of all ownerships on the railroads of this country. Under present plans 700 addi-

CONSOLIDATED SURPLUS ACCOUNT YEARS ENDED DECEMBER 31, 1934 AND 1935

	1934	1935
BALANCE OF SURPLUS, as at December 31	\$59,770,863.06	\$50,893,430.73
Balance from Income Account for year ended December 31	\$ 2,957,669.69	\$ 273,727.91*
Adjustment arising from transactions in connection with acquisition of outstanding shares of The Pullman Company.		8,938.39
Sundry credit adjustments on business of prior years	352,245.38	
	<u>3,309,915.07</u>	<u>264,789.52*</u>
	\$63,080,778.13	\$50,628,641.21
Less:		
Adjustment on revalued property units retired	\$ 376,866.65	\$ 438,894.92
Addition to Reserve for Contingencies on Securities, Trade Receivables, etc.	350,000.00	
Adjustment on account of disposition of Sagamore Plant		605,233.12
Dividends Declared and Paid	11,460,480.75	10,028,017.96
	<u>\$12,187,347.40</u>	<u>\$11,072,146.00</u>
BALANCE OF SURPLUS, as at December 31	<u>\$50,893,430.73</u>	<u>\$39,556,495.21</u>

*Figures in italics denote deficit.

CONSOLIDATED INCOME ACCOUNT FOR THE YEARS ENDED DECEMBER 31, 1934 AND 1935

	1934	1935
EARNINGS:		
From sleeping car business of The Pullman Company, after deducting all expenses incident to operations	\$ 9,808,157.27	\$ 8,906,047.00*
Less: Charges and allowances for Depreciation	9,210,801.63	10,553,027.51
	<u>\$ 597,355.64</u>	<u>\$ 1,646,980.51*</u>
From all manufacturing business, Pullman Railroad, and other miscellaneous properties, after deducting expenses incident to operations	\$ 4,075,030.05	\$ 2,866,583.62
Less: Charges and allowances for Depreciation	2,782,438.64	2,637,866.40
	<u>\$ 1,292,591.41</u>	<u>\$ 228,717.22</u>
From Security Investments, etc., less Administration Expense of Pullman Incorporated	\$ 1,734,629.28	\$ 1,348,101.72
Total Earnings from All Sources	\$ 3,624,576.33	\$ 70,161.57*
Less: Provision for Federal Income Tax	666,906.64	203,566.34
BALANCE carried to Surplus	<u>\$ 2,957,669.69</u>	<u>\$ 273,727.91*</u>

* Note—The Railroad Retirement Act of 1934 was declared unconstitutional in 1935. The charges therefor (\$378,931.74) made in 1934 as part of expense of operations have now been reversed and credit of that amount taken as reduction of expense of operation in 1935, in necessary conformity with the Interstate Commerce Commission accounting rules.

*Figures in italics denote deficit.

THE PULLMAN COMPANY

TRAFFIC AND OPERATING STATISTICS COMPARATIVE STATEMENT FOR YEARS ENDED DECEMBER 31

ITEM	1931	1932	1933	1934	1935
CARS OWNED.....	9,483	9,279	8,478	8,473	8,027
CARS OPERATED.....	7,402	5,693	4,944	5,029	5,057
CAR MILES.....	1,025,164,501	799,484,608	710,747,267	737,167,857	758,554,032
REVENUE PASSENGERS:					
Berth.....	14,583,183	10,185,444	9,248,461	10,258,642	10,624,818
Seat.....	8,401,738	5,564,063	4,468,077	4,846,707	4,853,890
TOTAL.....	22,984,921	15,749,507	13,716,538	15,105,349	15,478,708
REVENUE PASSENGER MILES.....	9,891,910,222	6,757,760,858	6,141,986,577	6,891,002,293	7,146,269,648
REVENUE FROM CARS.....	\$ 63,683,507	\$ 44,196,043	\$ 39,316,239	\$ 44,523,817	\$ 46,758,260
Average per Car.....	\$ 8,603.44	\$ 7,763.50	\$ 7,952.31	\$ 8,553.77	\$ 9,246.43
EXPENSES.....	\$ 60,773,171	\$ 45,416,077	\$ 39,880,665	\$ 44,124,174	\$ 48,405,241
Average per Car.....	\$ 8,210.37	\$ 7,977.53	\$ 8,066.48	\$ 8,774,290	\$ 9,572,120
NET EARNING FROM CARS.....	\$ 2,910,336*	\$ 1,220,034*	\$ 564,820*	\$ 399,643*	\$ 1,646,981*
TRAFFIC AVERAGES:					
Average Revenue per Passenger.....	\$ 2.77	\$ 2.81	\$ 2.87	\$ 2.95	\$ 3.02
Average Net Earning per Passenger.....	\$ 0.13	\$ 0.08*	\$ 0.04*	\$ 0.03	\$ 0.11*
Average Net Earnings per Car per Day.....	\$ 1.08	\$ 0.59*	\$ 0.31*	\$ 0.22	\$ 0.89*
Average Mileage per Car Operated.....	138,496	140,438	143,700	146,589	150,004
Average Journey per Passenger (Miles).....	430	429	448	456	462
Average Miles per Car per Day.....	379	384	394	402	411
Average Loading per Car (Passengers).....	9.65	8.45	8.64	9.35	9.42

*Figures in italics denote loss.

*Includes Pullman proportion of expense of operation of air conditioning equipment.

*After provision for Federal Income Tax.

tional Pullman cars will be equipped with air conditioning apparatus by the opening of the 1936 summer travel period.

Several trains of new lightweight Pullman sleeping cars, in various kinds of basic material and of various forms of streamlined articulated design, have been built or are under way for inclusion in new-type highspeed trains that the railroads will have in regular operation in the near future. The engineering, manufacturing and operating staffs of your subsidiary companies are co-operating with the railroads in the installation of new high-speed train services, either with especially equipped cars of the existing standard types or with cars of the new lightweight types. There is as yet a wide range of experimentation in car equipment and motive power for highspeed trains. The staffs of your subsidiary companies are thoroughly in touch with this experimentation, and it is proposed to keep the manufacturing facilities and methods of those companies prepared to meet the developing demands of the railroads for equipment adapted to safe and economical operation.

Taxes

While retrenchment in controllable expense items has been carried to the limit practicable without impairment of service or sacrifice of business position, tax bills have become an increas-

ingly burdensome part of the cost of doing business. For the fiscal year 1935, taxes paid by Pullman Incorporated and all subsidiaries for the support of Federal, State, and local governments amounted to a total of \$2,122,500. This expense consumed the entire net income, before taxes, derived from operations of your company and subsidiaries during that year, and was equivalent to approximately 56 cents per share on total outstanding share capital. This indicates that Pullman was relatively a much better revenue-producer for the many tax bodies of the country than for its own stockholders. The increased scale of corporate taxes becoming effective under the Federal Revenue Act of 1935 augmented by the new levies in prospect under the Social Security and Railroad Retirement Acts, with no present indication of decreased State and local taxes, will place a materially larger burden upon corporate income. As stockholders must eventually bear this burden, responsibility rests upon them to exert to the utmost their influence in favor of economy in Government that will permit reduction of excessive taxation. The sleeping car subsidiary, with a fixed price for its product, is particularly vulnerable to this tax influence.

Respectfully submitted on behalf of the Board of Directors,

David A. Crawford,
President.

March 21, 1936

[Advertisement]

News (Financial)

(Continued from page 558)

Washington have applied to the Interstate Commerce Commission for authority to acquire 6.4 miles of the line of the former Washington, Baltimore & Annapolis Electric Railway from Odenton, Md., to the Bowie race track.

The commission on March 25 issued a service order authorizing the company, effective March 26, to furnish adequate transportation service over the line in order to meet the needs for service to and from the race track in connection with the spring racing meet, without prejudice to any findings the commission may reach on the application.

PITTSBURGH & WEST VIRGINIA.—Equipment Trust.—A. G. Becker & Co., New York, have offered, subject to approval of the Interstate Commerce Commission, \$2,000,000 of 3½ equipment trust certificates, due in installments from April 1, 1937, to April 1, 1946. The issue is priced to yield from 1 per cent to 4 per cent, according to maturity.

SOUTHERN.—R.F.C. Loan.—This company has applied to the Interstate Commerce Commission for authority to nominally issue \$4,859,000 of first consolidated mortgage 5 per cent bonds payable July 1, 1994, so that they may be available to provide funds to retire a like amount of general mortgage 5 per cent bonds of the Virginia Midland maturing May 1. The bonds to be nominally issued are offered as collateral for an additional loan from the Reconstruction Finance Corporation for five years.

VIRGINIAN.—Bonds.—Division 4 of the Interstate Commerce Commission has authorized this company (a) to issue \$60,344,000 of first lien and refunding mortgage bonds, series A. 3¼ per cent, due March 1, 1966, to be sold at not less than 100¼ and accrued interest, the proceeds to be used to redeem a like amount of outstanding first mortgage 50-year bonds (b) to procure the authentication and delivery of \$9,544,000 of the series-A bonds; \$9,044,000 thereof to be delivered to the

Virginian to reimburse it for the cancellation of a like amount of its first-mortgage 50-year gold bonds now in the treasury, the remaining \$500,000 to be used to reimburse the treasury for capital expenditures; (c) to issue five unsecured promissory notes amounting to \$5,000,000 to evidence a loan of like amount, the proceeds therefrom, together with other funds, to be used to pay the premium on the bonds called for redemption and expenses incident to issues and exchanges herein authorized; and (d) to pledge under the proposed first lien and refunding mortgage securities of the Virginian & Western, consisting of 470 shares of common stock, \$2,852,000 of first-mortgage 5-per cent gold bonds, and a proposed unsecured negotiable 6-per cent promissory note in the face amount of \$5,136,144.38, securities of the Virginian Terminal, consisting of 4,990 shares of common stock and \$7,490,000 of 5-per cent first-mortgage 50-year gold bonds; and 250 shares of the capital stock of the par value of \$100 a share of the Norfolk Terminal.

WESTERN PACIFIC.—Hearing on Reorganization Plan.—A hearing on the plan of reorganization for this company submitted to the Interstate Commerce Commission was begun at Washington on March 23 and adjourned to April 21. Testimony in support of the plan was given by Charles Elsey, president of the company, while objections were presented by Cassius M. Clay, counsel for the Reconstruction Finance Corporation.

Average Prices of Stocks and of Bonds

	Mar. 24	Last week	Last year
Average price of 20 representative railway stocks...	48.35	48.51	28.58
Average price of 20 representative railway bonds...	80.71	80.76	71.07

Dividends Declared

Cincinnati, Sandusky & Cleveland.—6 Per Cent Preferred, \$1.50, semi-annually, payable May 1 to holders of record April 15.
Cleveland, Cincinnati, Chicago & St. Louis.—5 Per Cent Preferred, \$1.25, quarterly, payable April 30 to holders of record April 20.
Joliet & Chicago.—\$1.75, payable April 6 to holders of record March 25.
Norfolk & Western.—Adjustment Preferred, \$1.00, quarterly, payable May 19 to holders of record April 30.

Railway Officers

EXECUTIVE

William W. Rhoads, assistant to vice-president in charge of operation and maintenance of the Reading, has been appointed assistant to president.

E. M. Worley, former vice-president and general manager of the Oklahoma City-Ada-Atoka, has been appointed assistant to receiver of the Fort Smith & Western, with headquarters at Fort Smith, Ark., succeeding **W. E. Welch**, who has resigned to accept service elsewhere.

C. A. Blood, assistant vice-president of the Lehigh Valley, with headquarters at New York, will retire from active service on April 1, at his own request. Mr. Blood entered the service of the Lehigh Valley at Sayre, Pa., in 1877 and was appointed division freight agent at Pottsville, Pa., in



C. A. Blood

1890, which position he held until 1892, when he became assistant to the general eastern freight agent at New York. From May, 1894, to May, 1895, he was division
(Continued on page 565)

Annual Report

Canadian Pacific Railway Company

FIFTY-FIFTH ANNUAL REPORT

OF THE
DIRECTORS OF CANADIAN PACIFIC RAILWAY COMPANY
YEAR ENDED DECEMBER 31, 1935

To the Shareholders:

The accounts of the Company for the year ended December 31, 1935, show the following results:—

Income Account

Gross Earnings	\$129,678,904.57
Working Expenses (including taxes).....	107,281,380.60
Net Earnings	\$22,397,523.97
Other Income—Net	8,145,494.31
	\$30,543,018.28
Deduct provision for depreciation of Ocean and Coastal Steamships*	3,550,996.64
	\$26,992,021.64
Deduct Fixed Charges	24,159,937.83
Balance transferred to Profit and Loss Account.....	\$2,832,083.81

* In 1934 provision for such depreciation, amounting to \$3,783,660.01, was deducted from Profit and Loss and Surplus Revenue Account.

Profit and Loss Account

Surplus Revenue December 31, 1934.....	\$145,912,720.95
Balance of Income Account for the year ended December 31, 1935	2,832,083.81
	\$148,744,804.76
DEDUCT:	
Loss on lines abandoned and on property retired and not replaced.....	\$4,692,085.65
Miscellaneous—Net Debit	548,030.96
Provision for losses in respect of investment in lines in the United States controlled through stock ownership.....	4,000,000.00
	9,240,116.61
Profit and Loss Balance December 31, 1935, as per Balance Sheet	\$139,504,688.15

The operations for the year 1935 resulted in an improvement of \$145,953 over the comparable figure for the previous year. The balance of Income Account available for transfer to Profit and Loss Account after deduction of provision for depreciation of Ocean and Coastal Steamships was \$2,832,083. The comparable figure for 1934 of \$2,686,130 may be arrived at by deducting from \$6,469,790, balance of Income Account, \$3,783,660 provision for depreciation of Ocean and Coastal Steamships, charged to Profit & Loss and Surplus Revenue Account in that year. In spite of the slight improvement mentioned, the level of earnings is still far from satisfactory.

Railway Earnings and Expenses

The results of railway operations in 1935 as compared with 1934 are as follows:

	1935	1934	Increase or Decrease
Gross Earnings	\$129,678,904	\$125,542,954	\$4,135,950
Working Expenses (including taxes)	107,281,380	101,158,931	6,122,449
Net Earnings	\$ 22,397,524	\$ 24,384,023	\$1,986,499

In 1935 working expenses, including taxes, amounted to 82.73% of gross earnings, as compared with 80.58% in 1934. Excluding taxes, the ratio was 79.56% as against 77.34% in 1934.

The trend of gross earnings during the first eight months of the year was irregular, there being in the aggregate a slight decrease compared with the same period of the previous year. During the remainder of the year a definite improvement was manifest, and for the full year there was an increase of \$4,135,950 or 3.3%. Passenger earnings decreased \$218,027 during the first seven months, but owing to an improvement in each month thereafter the final results for the year showed a decrease of \$3,090 only. Freight earnings for the year increased \$2,959,778 or 3.1%. The decrease for the first eight months was \$254,737, and the increase for the remainder of the year was \$3,214,515. There were moderate increases in earnings from coal, paper, refinery and smelter products and substantial increases in lumber, woodpulp and petroleum products. The earnings from grain and grain products again showed a reduction, being lower than in any

year since 1914. Notwithstanding that during the early part of the summer the prospects of the wheat crop in Western Canada seemed excellent, owing to the development of rust and frost in many districts the total production fell much below the average. Conditions in the territory tributary to your Company's lines showed some improvement, with the result that a slightly larger proportion of the total crop will be available for movement by your Company than in the previous crop year.

Working expenses increased \$6,122,449 or 6.1%. The revision of the scale of deductions from basic rates of pay applicable to officers and employees was put into effect, as indicated in the last Annual Report, resulting in an addition of \$3,068,000 to the working expenses of the year. During the early part of the year extraordinary and prolonged snow and flood troubles in British Columbia entailed heavy expenses for maintenance and re-routing of trains. Main line traffic was disrupted for a period of ten days.

Maintenance expenses for the year increased \$3,331,221 or 8.5%. A substantial part of this increase was due to the partial restoration of payroll deductions. Moreover, in order to assist in stimulating employment, under agreement with the Dominion Government, the main locomotive and car shops were operated for three more days per month from July to November inclusive than in 1934 at an increased expense of \$1,065,441. As a result, repairs to equipment were performed in advance of the time when the work would otherwise have been done. Nevertheless it was considered desirable to continue the policy adopted two years ago of charging the cost of such repairs to working expenses at the time when the expenditures were incurred, in order to avoid the creation of deferred charges against future years' operations. All expenditures in connection with work done during the year have been taken up in the accounts. Your property continues to be maintained in an efficient condition.

Transportation expenses increased \$1,861,064 or 4.1%. The ratio of transportation expenses to gross earnings rose from 36.3% in 1934 to 36.6% in 1935. This increase in ratio is more than accounted for by the partial restoration of payroll deductions. Continued improvement in efficiency is indicated by an increase in average freight train loading from 1,525 tons in 1934 to 1,546 tons in 1935, and in gross ton miles per train hour from 24,062 to 25,051. Average fuel consumption for freight trains decreased to 109 pounds per 1,000 gross ton miles as compared with 112 pounds in 1934.

Traffic and general expenses increased \$847,468, owing principally to partial restoration of payroll deductions and also to larger pension disbursements.

Other Income

In accordance with intimation given at the last Annual Meeting, the caption "Other Income" has been substituted for "Special Income" to describe the Company's net income derived from sources other than railway operations and lands, and the items included in the first two sub-captions have been reclassified. Other Income for 1935 showed an increase over 1934 of \$1,481,701.

The caption "Dividends" includes all income received by the Company by way of dividends. The increase over the comparable figure of 1934 is \$1,228,096, due principally to an increase of \$1,177,750 in the cash distributions received from The Consolidated Mining & Smelting Company of Canada, Limited.

Net income from interest, exchange, separately operated properties and miscellaneous decreased \$128,624 from the comparable figure of 1934.

Net earnings of ocean and coastal steamships before depreciation increased \$560,475. While the net earnings of these services have shown yearly increases since 1931, the returns are still much below a satisfactory level. During the year 1935 the Company's steamships made 133 regular voyages on the Atlantic, 26 on the Pacific and 35 cruises, an increase from 1934 of 4 Atlantic voyages and 1 Pacific voyage and a decrease of 8 cruises. It is a matter of satisfaction to report that there were no casualties of a major nature. The "Minnedosa" and "Melita" were sold during 1935.

Net earnings from hotel, communication and miscellaneous properties decreased \$178,246. Owing to the continued serious losses in the operation of the Place Viger Hotel, Montreal, which showed no prospect of improvement notwithstanding every effort to secure additional patronage and to operate it in the most economical manner, this well-known unit of the Company's sys-

tem was closed on September 30, 1935. It was with regret that your Directors found themselves compelled to take this action.

Steamship Depreciation

The full annual depreciation requirement for your ocean and coastal fleets, amounting to \$3,550,996, was appropriated from Income Account instead of from Profit and Loss Account.

Fixed Charges

It is satisfactory to record that, after showing annual increases for many years, Fixed Charges in 1935 were \$418,087 less than in 1934. Moreover, in order to avoid any conflict with the meaning which will be ascribed to the term "Fixed Charges" on this continent as a result of the recent definition by the Interstate Commerce Commission of the accounts to be so designated by railways subject to its jurisdiction, interest on unfunded debt and amortization of discount on funded debt, treated as a deduction from Special Income in 1934, have now been included as part of the Fixed Charges. Were it not for this change, the reduction in Fixed Charges as compared with the preceding year would be \$576,383.

Profit and Loss Account

During the year an active policy of retiring unprofitable and excess property in order to secure more remunerative operation was continued, with the result that the write-off for loss on lines abandoned and on property retired and not replaced was \$140,000 greater than in 1934. Applications were made to the Board of Railway Commissioners for Canada for approval of the abandonment of five branches aggregating 104.6 miles of line. One of these branches had not been in operation for a number of years, and the operation of the others had proved unprofitable for some time. Four of these applications have been granted and one involving 33.1 miles of line has been refused.

Under the authority granted, two lines were abandoned during the year, namely:

(a) North Fork Branch of Kettle Valley Railway Company, leased to your Company, West End to Archibald (17.4 miles), Province of British Columbia.

(b) Stobie Branch of your Company, mile 1.6 to Blezard Mine (3.4 miles), Province of Ontario.

The abandonment of the other sections approved will be proceeded with during 1936.

The necessary adjustment has been made in the accounts in regard to all railway, steamship and other property retired during the year, including the furnishings and equipment of the Place Viger Hotel. No adjustment has been made with respect to the hotel building itself pending a decision as to the disposition thereof. While the accounting charges in connection with the retirement of such properties represent a substantial sum, the Company will benefit in the future by the elimination of operating losses previously sustained, and from the sale or use elsewhere of materials and property released.

A further appropriation of \$4,000,000 was made to provide for possible writing down in the future of your Company's investment in controlled railways in the United States. The reserve for this purpose is now \$16,000,000.

Dividends

While, as a result of the operations for the year, the Company was able to transfer \$2,832,083 from Income Account to Profit and Loss Account, yet in view of the necessity for conserving its cash resources to meet necessary expenditures, including advances to the Minneapolis, St. Paul & Sault Ste. Marie Railway Company, to which reference is made later in this Report, your Directors deemed it inadvisable to declare any dividend in respect of the year 1935.

Balance Sheet Accounts

Some changes in the classification of the accounts in the General Balance Sheet have been found to be desirable, particularly in view of the regulations adopted by the Securities and Exchange Commission of the United States, which controls the listing of the Company's stocks and securities on the New York Stock Exchange. Such changes include the reclassification under new headings of the investments in other companies and the transfer to a separate heading on the asset side of the Balance Sheet of unadjusted debit balances heretofore deducted from Reserve for Contingencies. Other minor changes in nomenclature have been made. In view of these changes, it was thought well to include this year a detailed schedule of the investments of the Company in stocks, bonds, and other securities of leased, controlled and jointly controlled railway companies and wholly owned companies. In addition to the schedule of contingent liabilities, a schedule has been incorporated showing the Company's obligations in respect of principal of securities of companies owning railway lines operated by it under lease.

Land Accounts

Sales of agricultural lands during the year amounted to 124,354 acres for \$1,217,890, an average of \$9.79 per acre, including 1,201 acres of irrigated land at \$47.13 per acre and the remainder at an average of \$9.43 per acre.

Interest on deferred payments decreased from the figure of the previous year because of the transfer mentioned on the succeeding paragraph, and because of an increase over 1934 in interest rebates to land contract holders. These rebates first granted in 1932, and continued in subsequent years as a measure of relief to the farmers who were suffering from severe economic pressure as a result of poor crops and low prices, amounted to \$1,349,497 in 1935, and have aggregated \$6,300,082 since 1932.

The contract with the Board of Trustees of The Eastern Irrigation District, to which reference was made at the last Annual Meeting, has now been completed by the transfer to the District of the Eastern Section of the Company's Irrigation Project, together with the unsold lands and the deferred payments under existing contracts. The liability of the Company to maintain and operate the system has been transferred to and assumed by the District, with the sanction of the Legislature of Alberta. This will result in an annual saving in land expenses of not less than \$400,000. As a result of this arrangement, Deferred Payments have been reduced by \$4,628,555 and Unsold Lands and Other Properties by \$10,991,589, involving a reduction in Land Surplus of \$15,620,144. The lands transferred have been written off at average appraisal values, though with the exception of a relatively small irrigable area, they are lands of poorer quality. The contracts under which land was sold and water delivered in this section of the irrigation project provided from the outset for the assumption ultimately by the water users of the maintenance and operation of the system on a co-operative basis. Your Directors are of the opinion that, by anticipating the transfer, substantial savings will be made in land expenses without jeopardizing the Company's interest in the development of traffic.

An agreement was made during the year between your Company, the Cadillac Coal Company, Limited and the Royalties Oil & Share Corporation Limited under which their colliery properties and coal lands in the vicinity of Lethbridge, including those acquired by your Company with other properties of the Alberta Railway & Irrigation Company and certain coal lands of the Calgary & Edmonton Railway Company, were conveyed to a new company known as Lethbridge Collieries Limited, in which your Company has a controlling interest. In exchange for the properties conveyed, your Company received a total of \$480,000 par value of stock in the new company and undertook to complete the construction of a new shaft in consideration of the issue of additional stock equivalent to the amount of its expenditures. As at December 31, 1935, an additional \$200,000 par value of stock had been received on this account. The stock acquired has been included in Miscellaneous Investments at par value. The Company's investment in the capital stock of the Alberta Railway & Irrigation Company has been written down by an amount equivalent to the original cost to that company of the properties sold, and an equivalent amount, less the proportion of the credit from the stock acquired in Lethbridge Collieries Limited applicable to such cost, has been written off against Land Surplus. The merger will eliminate wasteful and costly competition in the Lethbridge field and already shows promise of profitable operation.

Pensions

Pension disbursements for the year totalled \$2,022,428 and were included in working expenses. During the year 381 employees were pensioned. The total number of pensioners at the end of the year showed an increase of 171 over the number at December 31, 1934. The distribution by ages of the number of pensioners on the roll at December 31, 1935, was as follows:—

Under 60 years of age.....	95
From 60 to 64 years of age inclusive.....	241
From 65 to 70 years of age inclusive.....	1,180
Over 70 years of age.....	1,246
	<hr/> 2,762

Capital Expenditures

In anticipation of your confirmation, your Directors authorized Capital Appropriations, in addition to those approved at the last Annual Meeting, aggregating for the year 1935 \$5,904,984, of which \$5,164,068 is in connection with the new rolling stock to be built under agreement with the Dominion Government hereinafter referred to. Your approval will be requested for capital expenditures during the present year of \$6,149,769. Particulars of the principal items are:—

Replacement and enlargement of structures in permanent form	\$ 362,977
Additions and betterments to stations, freight sheds,	

coaling and watering facilities and engine houses..	\$528,416
Ties, tie plates, rail anchors and miscellaneous roadway betterments	2,357,272
Replacement of rail in main and branch line tracks with heavier section	483,048
Installation of automatic signals.....	60,800
Additional terminal and side track accommodation....	112,118
Additions and betterments to rolling stock.....	2,176,676
Additions and betterments to hotels.....	21,000

Additions and betterments to rolling stock includes the cost of the balance of the new rolling stock to be built under the agreement with the Dominion Government hereinafter referred to and the capital proportion of expenditures for improvements. The latter, in addition to ordinary betterment of freight cars in conformity with interchange requirements and betterment of motive power to secure more efficient operation, includes for the first time expenditures for air-conditioning of sleeping, parlor and observation cars to be used in our transcontinental and international services in competition with the services operating over United States railways which have already been similarly equipped.

Finance

As one of the measures for the relief of unemployment adopted by the Dominion Parliament at the session of 1935, the Government agreed to purchase certain rolling stock to be sold in part to the Canadian National Railway Company and in part to your Company under so-called Hire-Purchase Agreements. In the case of your Company, the amount involved is \$5,730,000. The Company will have the use of the rolling stock, will reimburse the Government for the full amount of its cost in thirteen annual instalments commencing in 1938, and will acquire title upon payment of the final instalment. No interest will be payable in respect of the first two years, after which it will accrue at the rate of 4% per annum. The rolling stock is being constructed according to plans and specifications prepared by your mechanical engineers, and will be received by the Company during the year 1936. As a result of the arrangement, your Company will acquire 1,120 freight cars, 16 light weight passenger cars, 5 light weight passenger locomotives and 1 Diesel-Electric switching locomotive.

As a further part of the measures for the relief of unemploy-

ment adopted at the same session, the Government undertook to make advances to the two railway companies for the purpose of providing increased employment in their main shops, the amount in the case of your Company being \$1,270,000, of which \$1,065,441 was advanced during the year 1935. These advances are to be repaid in thirteen annual instalments commencing January 1, 1938, together with interest at 4% per annum, it being provided that no interest shall accrue in respect of the first two years after the date of the advances.

During the year \$2,079,000, principal amount, of equipment obligations were redeemed and an amount of \$2,284,200 was deposited with the Trustee of the Equipment Trust maturing 1944. Twenty Year 4½% Sinking Fund Secured Note Certificates to the amount of \$322,000 were also redeemed.

On January 2, 1935, the Company borrowed \$2,000,000 on its short term promissory notes from United States banks, secured by pledge of \$2,850,000, principal amount, Perpetual 4% Consolidated Debenture Stock. These loans were repaid at maturity during the year and the Debenture Stock was released and cancelled.

Minneapolis, St. Paul & Sault Ste. Marie Railway Company

Drought conditions in the territory served by this system were relieved during 1935, and as a result the crop was considerably improved, although unfortunately it suffered materially from the effects of rust, as in Canada. Commencing with the month of July revenues have shown an improvement, but owing to increases in wage rates and other uncontrollable expenses the improvement was not reflected in the net income for the year. On account of guarantee obligations and to protect its investment in this property, your Company advanced to the Soo Line during the year \$4,910,085, which enabled that company to meet all its interest charges and to redeem \$825,000 of notes issued in 1932 to the Railroad Credit Corporation which had been guaranteed by your Company.

United States Securities Exchange Act of 1934

Pursuant to the Securities Exchange Act of 1934, passed by the United States Congress, and in accordance with the rules adopted by the Securities and Exchange Commission under its authority, the permanent registration on the New York Stock Exchange of those of the Company's stocks and securities which

CANADIAN PACIFIC RAILWAY COMPANY GENERAL BALANCE SHEET, DECEMBER 31, 1935

Assets

PROPERTY INVESTMENT:	
Railway, Rolling Stock, Inland Steamships, Hotel, Communication and Miscellaneous Properties	\$767,737,162.19
Improvements on Leased Railway Property	97,337,171.45
Ocean and Coastal Steamships.....	104,849,337.98
Stocks, Bonds and Other Securities of Leased, Controlled and Jointly Controlled Railway Companies and Wholly Owned Companies—Cost....	199,956,164.25
	\$1,169,879,835.87
OTHER INVESTMENTS:	
Miscellaneous Investments—Cost.....	\$26,919,735.72
Advances to Controlled and Other Companies—Net	18,792,285.02
Mortgages Collectible and Loans and Advances to Settlers	2,951,534.33
Insurance Fund Investments	8,246,827.31
Deferred Payments on Lands and Townsites	40,857,030.19
Unsold Lands and Other Properties..	34,105,574.46
	131,872,987.03
CURRENT ASSETS:	
Material and Supplies	\$16,173,024.90
Agents' and Conductors' Balances....	5,368,213.88
Net Traffic Balances.....	485,917.72
Miscellaneous Accounts Receivable....	5,334,407.82
Cash	17,356,041.53
	44,717,605.85
UNADJUSTED DEBITS:	
Insurance Prepaid	\$237,760.24
Unamortized Discount on Bonds.....	572,098.59
Other Unadjusted Debits.....	1,245,858.48
	2,055,717.31
	\$1,348,526,146.06

AUDITORS' CERTIFICATE:

We have examined the Books and Records of the Canadian Pacific Railway Company for the year ending December 31, 1935, and having compared the above Balance Sheet therewith, we certify that in our opinion it is properly drawn up so as to show the true financial position of the Company at that date, and that the Income and Profit & Loss Accounts correctly set forth the result of the year's operations.

PRICE, WATERHOUSE & CO.,
Chartered Accountants, (England).

Montreal, March 6, 1936

Liabilities

CAPITAL STOCK:	
Ordinary Stock	\$335,000,000.00
Preference Stock—4% Non-cumulative	137,256,921.12
	\$472,256,921.12
PERPETUAL 4% CONSOLIDATED DEBENTURE STOCK:	
LESS: Pledged as collateral to bonds and notes	204,500,300.00
	291,411,548.74
BONDS AND NOTES:	
LESS: Securities deposited with Trustee of 5% Equipment Trust	7,640,770.41
	179,823,229.59
TWENTY YEAR 4½% SINKING FUND SECURED NOTE CERTIFICATES (1944):	
LESS: Purchased by Trustee and cancelled	9,483,300.00
	20,516,700.00
CURRENT LIABILITIES:	
Audited Vouchers	\$4,631,749.37
Pay Rolls	2,567,894.96
Miscellaneous Accounts Payable.....	1,959,164.51
Accrued Fixed Charges.....	1,486,104.12
	10,644,912.96
DEFERRED LIABILITIES:	
Dominion Government Unemployment Relief	\$3,512,664.50
Miscellaneous	317,054.10
	3,829,718.60
RESERVES AND UNADJUSTED CREDITS:	
Equipment Replacement Reserve....	\$8,340,368.22
Steamship Depreciation Reserve.....	36,210,202.77
Insurance Reserve	8,246,827.31
Contingent Reserves	7,454,731.70
Investment Reserve	16,000,000.00
Unadjusted Credits	3,624,045.93
	79,876,175.93
PREMIUM RECEIVED ON CAPITAL AND DEBENTURE STOCK (Less discount on bonds and notes written off at date of issue)	
	66,712,887.43
LAND SURPLUS	83,949,363.54
PROFIT AND LOSS BALANCE.....	139,504,688.15
	\$1,348,526,146.06

E. A. LESLIE, Comptroller.

[Advertisement]

had previously been listed on that Exchange became effective July 1, 1935.

Ordinary Capital Stock

The shareholders have heretofore from time to time authorized the increase in the Ordinary Capital Stock of the Company to an aggregate amount of \$385,000,000 of the total of \$500,000,000 of such stock which the Company is by law empowered to issue when so authorized. At a special meeting of the shareholders held on May 6, 1931, authority was granted for the issue of additional Ordinary Capital Stock of the Company to an amount of \$50,000,000, the proceeds to be applied to the purposes referred to in the resolution authorizing such issue. Owing to the unsatisfactory conditions which have prevailed since that authority was granted, rendering it impracticable to dispose of the Company's Ordinary Capital Stock, your Directors deemed it advisable that the Company's requirements for the purposes referred to should be met by the issue of terminable securities with a right of conversion into Ordinary Capital Stock, subject to terms and conditions approved by your Directors. Under this policy the Company, as mentioned in the Annual Reports for the years in question, issued in 1932 \$12,500,000 Convertible Ten Year 6% Collateral Trust Bonds and in 1934 \$12,000,000 Convertible Fifteen Year 4% Collateral Trust Bonds, secured in each case by pledge of Perpetual 4% Consolidated Debenture Stock of the Company, the holders in each case being given the right to convert their bonds into shares of the Ordinary Capital Stock of the Company in the ratio of four shares of the par value of \$25 each to each \$100 principal amount of the bonds. Such conversion privileges offer advantages both from the standpoint of the Company and the investor. Your Directors are of the view that until conditions become more settled it may from time to time be desirable to follow similar methods of financing. In order that they may be in a position to issue Ordinary Capital Stock, as may in their opinion be desirable for the purposes referred to in the resolution of the shareholders to which reference has been made, either for direct sale or for conversion privileges in connection with any terminable obligations heretofore or hereafter issued by way of refunding or otherwise for any such purpose, your authority will be asked at the forthcoming Annual Meeting for the issue of an additional \$65,000,000 of Ordinary Capital Stock in such amounts, on such terms and at such times as your Directors shall from time to time decide.

Co-operation with Canadian National Railway Company

The joint study of co-operative measures, plans and arrangements under the provisions of the Canadian National-Canadian Pacific Act 1933 was continued throughout the year. The arrangements previously in effect were continued, and certain others have advanced sufficiently for the preparation of formal agreements. In some of these, line abandonments will be involved, which will require the approval of the Board of Railway

Commissioners for Canada. The studies have resulted in the rejection of a number of proposals and a number of others are still under investigation. The total annual economy to be derived from the arrangements already in effect and from those recommended to the Joint Executive Committee has been estimated at slightly less than \$1,600,000, one-half of which will accrue to each Company. Further negotiations carried on during the year in an endeavour to secure co-operative economies in the telegraph and express services of the two companies have been without definite result.

Stock Holdings

The holdings of the Capital Stocks of the Company in December, 1935, were distributed as follows:—

	ORDINARY		PREFERENCE		Percentage of Ordinary and Preference Stocks combined
	No. of holders	Percentage of Stock	No. of holders	Percentage of Stock	
Canada	29,088	16.84	82	.28	11.94
United Kingdom and other British..	21,251	53.49	27,707	97.90	66.64
United States	16,322	24.24	28	.58	17.23
Other Countries ..	4,456	5.43	200	1.24	4.19
	71,117		28,017		

Changes in Directorate

Honourable J. Marcelin Wilson, President of the Banque Canadienne Nationale, was appointed a Director of the Company to fill the vacancy caused by the death of Honourable F. L. Beique.

Retiring Directors

The undermentioned Directors will retire from office at the approaching Annual Meeting. They are eligible for re-election:

MR. D. C. COLEMAN
MR. JOHN W. HOBBS
MR. R. S. McLAUGHLIN
SIR EDWARD R. PEACOCK, G.C.V.O.
MR. W. N. TILLEY, K.C.

Your Directors again acknowledge with gratitude the loyal co-operation and assistance of the officers and employees in all matters affecting the Company's interests.

For the Directors,

E. W. BEATTY, President.

MONTREAL, March 9, 1936.

[Advertisement]

News (Railway Officers)

(Continued from page 561)

freight agent at Pottsville, then being transferred in the same capacity to Bethlehem, Pa. Mr. Blood also served in a similar capacity at Philadelphia from October, 1897, to February, 1898. On the latter date he was appointed assistant general freight agent, with headquarters at New York, and in January, 1904, he was promoted to general freight agent, serving in that position until April, 1906, when he became freight traffic manager. During federal control of the railroads, from January, 1918, to March, 1920, Mr. Blood was traffic manager of the Lehigh Valley, the New York, Susquehanna & Western and the Buffalo Creek. At the end of that period he was appointed traffic manager of the Lehigh Valley, serving continuously in that position until his appointment as assistant vice-president in the traffic department in 1929.

OPERATING

E. E. Deyo, trainmaster on the Iowa division of the Chicago Great Western,

with headquarters at Des Moines, Iowa, has been appointed superintendent of the Illinois division, including the Oelwein (Iowa) terminal, with headquarters at Oelwein. C. J. Foster, superintendent at Oelwein, who has had jurisdiction over both the Iowa and Illinois divisions, has been transferred to Des Moines, with jurisdiction over only the Iowa division. T. A. Marshall has been appointed trainmaster at Des Moines, to succeed Mr. Deyo.

Charles H. Doorley, superintendent of the Gary division of the Elgin, Joliet & Eastern, at Gary, Ind., retired on pension on March 24. Born on March 24, 1866, at St. Catharines, Ont., Mr. Doorley entered railway service on March 24, 1884, as an engine wiper on the Grand Trunk (now part of the Canadian National), later serving as a fireman, engine hostler, and switchman on this road. In January, 1887, Mr. Doorley went with the Chicago & Alton (now the Alton) as a switchman, later being advanced to yardmaster. In 1896 he left this company to go with the Chicago, Hammond & Western (now the Indiana Harbor Belt) as a yardmaster,

going with the Chicago, Lake Shore & Eastern (now part of the Elgin, Joliet & Eastern) two years later as a switchman. While with this company Mr. Doorley was promoted successively through the positions of assistant yardmaster, night general yardmaster, general yardmaster, assistant superintendent, superintendent of the terminal at Joliet, Ill., acting superintendent of the Gary division and superintendent of that division, being appointed to the latter position in December, 1915.

TRAFFIC

William F. Griffiths, passenger traffic manager of the Delaware, Lackawanna & Western at New York, has been relieved of the duties of that position at his own request and has been appointed general agent of the passenger department, as reported in the *Railway Age* of March 7. Mr. Griffiths was born at Philadelphia, Pa., and entered the service of the Chicago, Burlington & Quincy in November, 1884, at Omaha, Nebr., serving successively in the passenger department at Chicago, St. Joseph, Mo., and St. Louis, until April,

1896. On the latter date he became chief clerk of the Kansas City, Pittsburgh &



William F. Griffiths

Gulf (now Kansas City Southern) at Kansas City, Mo. Mr. Griffiths entered the service of the Lackawanna as a rate clerk in the passenger department in August, 1899, and subsequently became chief clerk and assistant general passenger agent at New York. He was promoted to general passenger agent in 1914 and became passenger traffic manager in January, 1921.

Walter H. Dominick, whose appointment as passenger traffic manager for the Delaware, Lackawanna & Western at New



Walter H. Dominick

York was noted in the *Railway Age* of March 7, was born in New York and attended high school and Albany Business College. Mr. Dominick entered railway service in May, 1910, as stenographer in the passenger department of the Lackawanna, and the following January he became rate clerk. In September, 1914, he became chief rate clerk and in January, 1918, assistant superintendent of dining car service. He became secretary of the consolidated ticket office committee, eastern region, U. S. Railroad Administration, in September, 1918. At the termination of federal control in 1920 he was appointed assistant general passenger agent of the Lackawanna. Mr. Dominick was promoted to general passenger agent at New York in February, 1925, the position he held until his recent appointment as passenger traffic manager.

John L. Homer, whose appointment as general passenger agent for the Delaware, Lackawanna & Western at New York was noted in the *Railway Age* of March 7, entered railway service with the New York Central in 1892 as telegrapher and towerman. He became associated with the Lackawanna in September, 1895, and, after serving as ticket agent in its various New York offices, Mr. Homer was promoted to city passenger agent. He served successively as division passenger agent at Newark, N. J., general eastern agent and assistant general passenger agent at New York, which position he held until his recent appointment as general passenger agent. Mr. Homer is a past president of



- John L. Homer

the General Eastern Passenger Agent's Association of New York.

M. H. Murphy, whose appointment as general eastern passenger agent for the Delaware, Lackawanna & Western at New York was noted in the *Railway Age* of March 7, entered the service of the Lackawanna in April, 1898, at Elmira, N. Y., where he learned telegraphy. Mr. Murphy was appointed ticket agent in July, 1905, and in 1910 he was transferred to New York. He was appointed city ticket agent in 1913 and was promoted to traveling passenger agent in March, 1920. Mr. Murphy became district passenger agent at



M. H. Murphy

New York in April, 1928, the position he held until his recent appointment as general eastern passenger agent.

A. C. McIntyre and **M. J. Ormond**, assistant freight traffic managers of the Lehigh Valley, with headquarters at New York, have been appointed freight traffic managers.

George H. Reinbrecht, coal traffic manager of the Erie, has been appointed to the same position, a newly-created title, on the Chesapeake & Ohio, with headquarters as before at Cleveland, Ohio. **F. H. Cummings**, assistant general coal freight agent of the C. & O., has been appointed general coal freight agent, with headquarters at Cincinnati, Ohio. These changes, which will become effective on April 1, were made following the death on February 9 of **A. M. Dudley**, general coal freight agent of the C. & O., with headquarters at Richmond, Va.

Mr. Reinbrecht has been connected with the Erie for more than 25 years. He was born on May 13, 1894, at New York, and entered railway service on December 1, 1910, as an office boy on the Erie. He entered the coal traffic department on February 23, 1914, as a stenographer, and after advancing through various positions in this department, he was appointed coal freight agent in November, 1920. In December, 1924, Mr. Reinbrecht was advanced to general coal freight agent and in February, 1927, he was further promoted to coal traffic manager, which position he held until his recent appointment as coal traffic manager of the C. & O.

OBITUARY

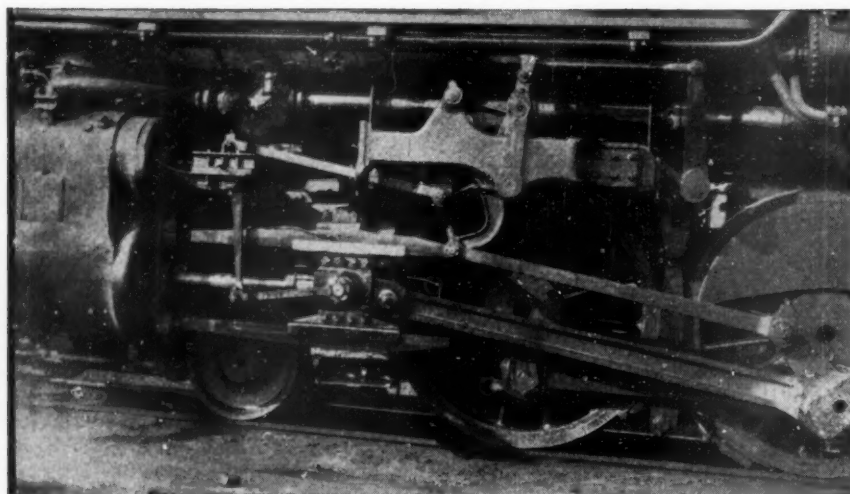
Walter V. Struby, president and treasurer of the Missouri Southern, with headquarters at Denver, Colo., died on March 19 at the Drake hotel, Chicago, while on a business trip.

John Sutter Ruff, division engineer of the Providence division of the New York, New Haven & Hartford, with headquarters at Providence, R. I., died in that city on March 20, at the age of 52 years.

Maurice Jarrett, trainmaster of the Jacksonville Terminal Company, Jacksonville, Fla., died at his home at that point on March 16 after about 40 years of service with this company.

Hugh Montgomery, former superintendent of motive power and rolling stock of the Rutland, with headquarters at Rutland, Vt., who died recently of heart disease, at Coconut Grove, Fla., was born on April 26, 1864, at London, Ont., and received his education in the public schools. Mr. Montgomery entered railway service in 1879 as apprentice for the Canada Southern (Michigan Central) and in 1884 he became locomotive fireman for the Chicago & North Western, serving consecutively as engineman, road foreman of engines and general foreman. In 1900 he was appointed road foreman of engines and then general foreman for the Central of New Jersey. In 1907 he became superintendent motive power and equipment for the Bangor & Aroostook. Mr. Montgomery was appointed superintendent motive power and rolling stock for the Rutland in July, 1913, from which position he retired in the latter part of last year.

THE RADIUS BARS of the Baker Valve Gear



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CARBON
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CONSIDER the gruelling service to which the well-known Baker Valve Gear is subjected. Distribution valves...weighing about 250 pounds...are given 672 reversals per minute at driver speed (60 miles per hour, 60 inch drivers).

Only forging steels of high strength, great toughness and exceptional resistance to fatigue will stand up in the Baker Valve Gear. Furthermore, these qualities must be secured without penalty of weight.

The radius bar of the Baker Valve Gear—the most vital forging in the assembly—is an excellent example of the strength, toughness and dependability of Carbon Vanadium Steel.

If you have a steel forging or casting that is subjected to unusual service or if you are seeking a steel combining strength, toughness and resistance to fatigue, put your problems up to the Metallurgical Engineers of the Vanadium Corporation of America. They will be glad to help you.

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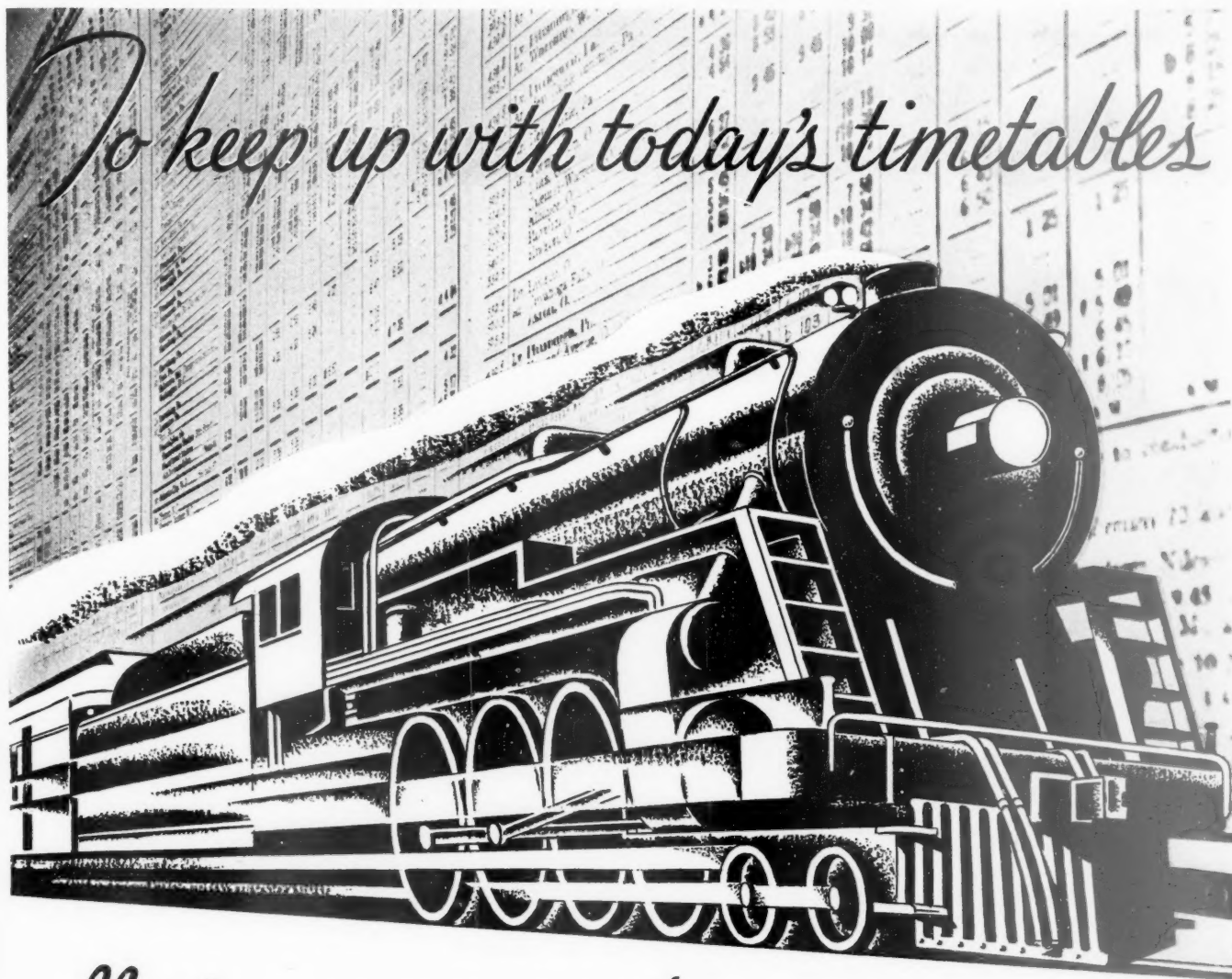
Plants at Bridgeville, Pa., and Niagara Falls, N. Y.
Research and Development Laboratories, Bridgeville, Pa.



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of vanadium, silicon, chromium
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are used by steel makers in the
production of high-quality steels.

Vanadium Steels

FOR STRENGTH • TOUGHNESS • DURABILITY



Motive power needs

Mayari Engine-Bolt Steel

TIMETABLES of these days are harsh taskmasters. In many cases the pace they dictate is a much higher sustained speed than was figured on at the time most locomotives now in use were built.

Mayari Engine-Bolt Steel keeps the rack of this rigorous service from running up maintenance costs. It has the higher physicals needed to bear up as the stresses that go with high speeds bear down on bolts, studs and other fastenings. At the same time it retains in full measure the reliability of materials formerly in general use.

No heat-treatment is needed to prepare Mayari Engine-Bolt Steel for heavy duty. It can be used as re-

ceived. No chance for error in treatment. No elaborate equipment is needed.

A GENERAL-PURPOSE STEEL

Mayari Engine-Bolt Steel is also unsurpassed for valve-motion pins and other case-hardened parts. It's an all-purpose steel, meeting practically every need for bolts, pins and miscellaneous locomotive parts.

BETHLEHEM STEEL COMPANY, General Offices: Bethlehem, Pa. District Offices at Albany, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Portland, Ore., Salt Lake City, San Antonio, San Francisco, St. Louis, St. Paul, Seattle, Syracuse, Washington, Wilkes-Barre, York. Export Distributor: Bethlehem Steel Export Corp., New York.



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Twenty - five remote control installations are giving an average return of 42.7%, which means that they are practically paying for themselves in two years.*

G-R-S Coded Remote Control System makes possible this economy along with improved train operation and increase in track capacity.

**Signal Section A.A.R. 1936 Proceedings, Volume XXXIII p. 22*

Discover the possible returns on your road with this system. Our nearest district office will gladly make a survey.

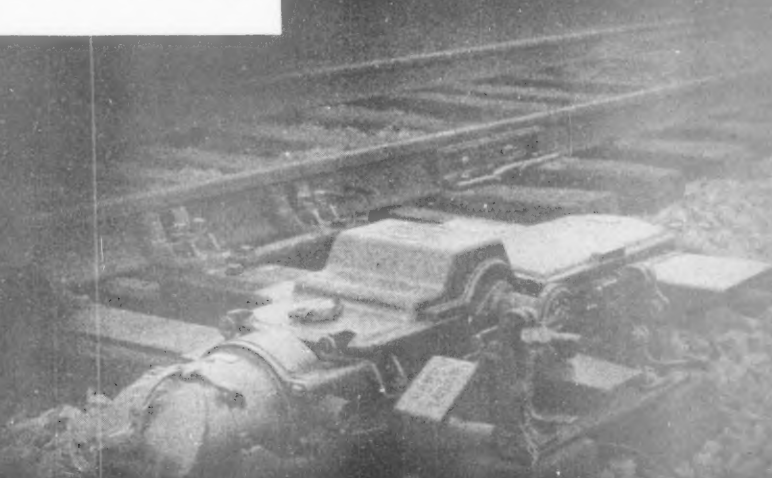
SPENDING

With the exception of battery and charging equipment, the control unit contains all the necessary equipment at the control point, including a track diagram, necessary control levers, and indication lights.

Quick interconnection; units easily transferred to some other point.



The field unit contains all the coded equipment including the "application relays" for controlling the switch and associated signals. Units are factory wired and tested ready for service, thereby saving time and installation costs.



Our



GENERAL RAILWAY SIGNAL COMPANY

New York

Chicago

ROCHESTER, N. Y.

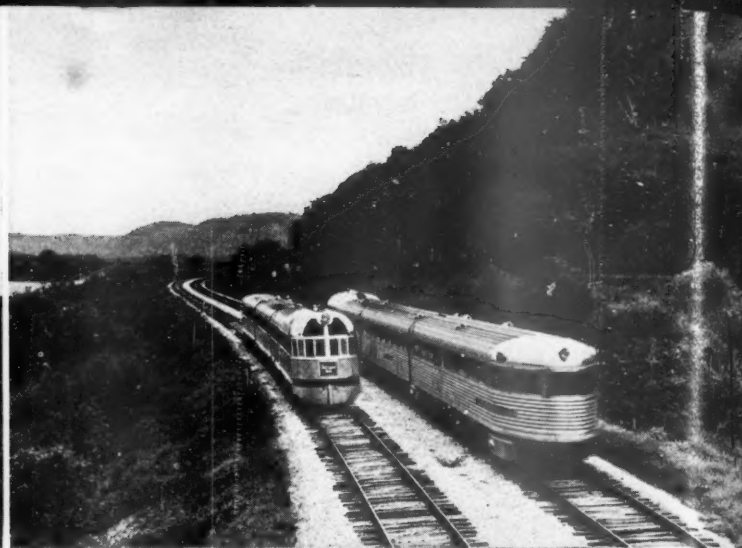
St. Louis

A-1316





The original Burlington Zephyr, operating between Lincoln, Omaha, and Kansas City, with G-E electric equipment



The Twin Zephyrs each make 882 miles daily, from Chicago to the Twin Cities and back—powered by G-E motors and generators

HOW THEY MODERNIZED TRAVEL

..... a LESSON for every American Railroad

Go back to the early part of 1933. The officials of the Burlington wanted a train which could provide more speed, more comfort, greater cleanliness than any then in existence. They wanted to give passengers a fast, quiet, enjoyable trip. Above all, they wanted a train that would earn a profit—that on a semilocal run with a few passengers, with a little mail and express, could bring in enough revenue to more than cover the operating costs.

So they built a new and revolutionary type of train—the Zephyr. They put the power plant in the first car, and put electric motors on the front axles. They pared weight from 400 tons to 95; they jumped schedule speed from 35 mph to 55 and 60; they streamlined it and sliced the horsepower from 2800 or thereabouts to 600.

WHAT HAPPENED?

The first Zephyr—in regular service, November 11,

1934—immediately made money. Travel boomed until it became necessary to increase her seating capacity 50 per cent. Costs dropped from 64 cents a mile on the old train to 34. And, most amazing, the train's performance was all but perfect (actually 99 per cent), as it rolled up 177,000 service miles the first year.

THEN CAME THE TWIN ZEPHYRS

Designed to operate on a highly competitive run; to average better than 60 mph; to run 441 miles a day; the Twin Zephyrs went into service on April 21, 1935. Six weeks later their work was doubled. Since June 2, each has made a daily round trip of 882 miles, averaging 66 mph between Chicago and St. Paul—and they make real money. In two months they earned approximately \$75,000 over and above operating expenses—at the rate of \$450,000 a year.

G E N E R A L



The Mark Twain Zephyr, G-E equipped, travels 442 miles a day between Burlington, Iowa, and St. Louis, Mo.

WITH ZEPHYRS

Now building, four more Zephyrs for Denver-Chicago and Chicago-Twin Cities service. All will have General Electric drive

NEXT, THE MARK TWAIN ZEPHYR

Well satisfied that Zephyrs could more than earn their keep, the Burlington launched a fourth, the Mark Twain, on October 28, 1935. This brought the daily mileage up to 2706 for lightweight, streamlined, Diesel-electric trains on this railroad—2706 miles at an average of 54 mph for express and local runs.

AND NOW, FOUR MORE ZEPHYRS

The need for Zephyrs grows. In February, the Burlington ordered the two new 3000-hp Denver Zephyrs to run daily between Chicago and Denver in 16 hours

—1039 miles at 65 mph. Burlington also ordered two more, with 1800-hp engines, to take care of the increased traffic that the now famous "Twins" have created. So, by fall, 1936, only two years after the original Zephyr began its business career, eight of these modern trains will be earning money for the Burlington.

There's a lesson here. The Zephyrs pay. Modernizing travel pays. It brings a real increase in revenue; it brings a real decrease in railroad costs.

Let General Electric engineers bring you their experience with Diesel-electric motive power—experience gained in designing and building the electric equipment on the eight Zephyrs—in electrifying 15 of the 18 lightweight, streamlined, Diesel-electric trains now in service or on order.

General Electric Company,
Schenectady, New York.

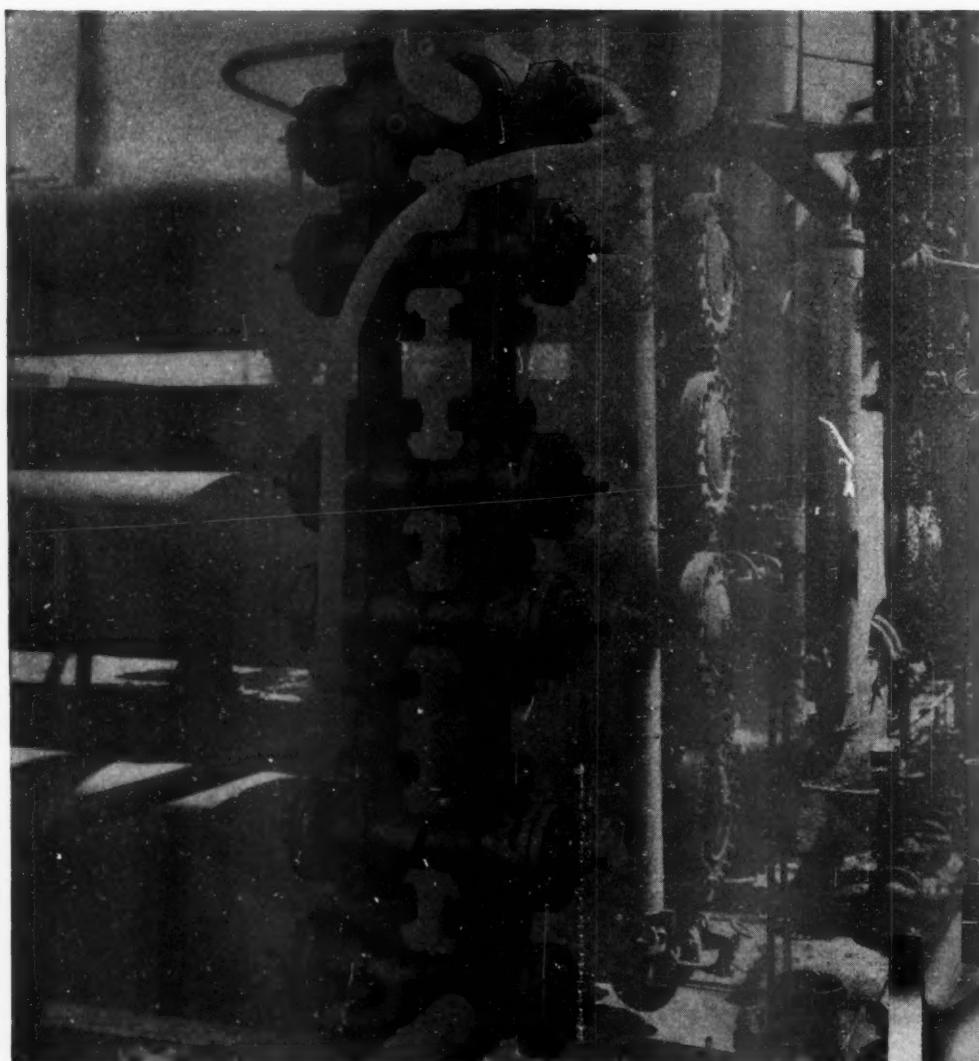


250-15

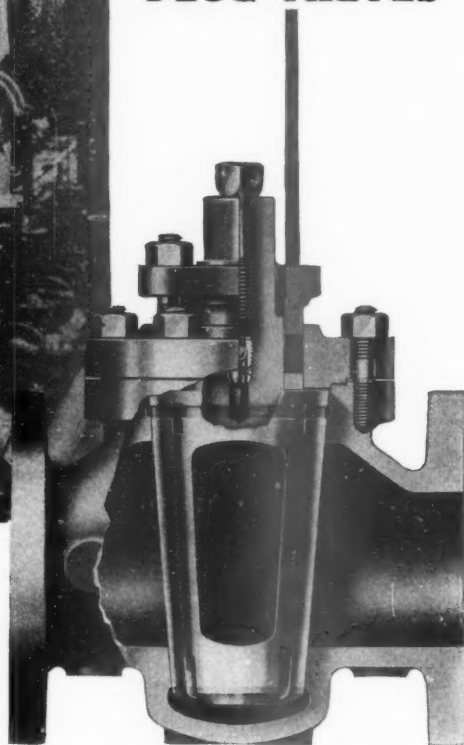
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LUBRICATED PLUG VALVES



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LUBRICATED
PLUG VALVES**



Long service from valves largely depends upon choosing the correct valve for any specific service. Our engineers, backed by a complete line of all types of valves, are prepared to recommend the most suitable type of valve for the most economical performances.

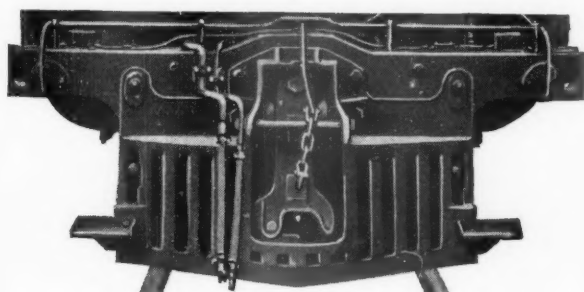
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WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

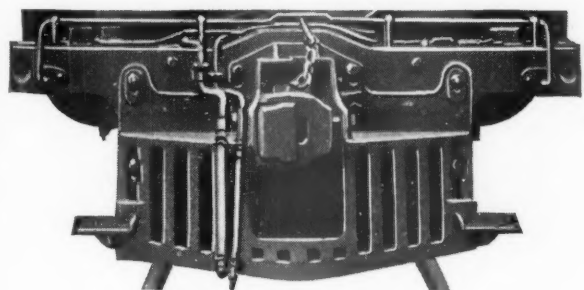
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Coupler in depressed position



Coupler in extended position—used only when necessary to couple to other equipment

COMMONWEALTH

DEFLECTING PILOT AND DROP COUPLER

THE coupler, in its depressed position, and the cast steel, well braced pilot, form a strong, impact-resisting device to throw to one side any object struck by the locomotive, reducing to a minimum the danger of derailment.

Application to your locomotives will assure greater safety to passengers.

A large number of locomotives now equipped with this improved pilot arrangement.

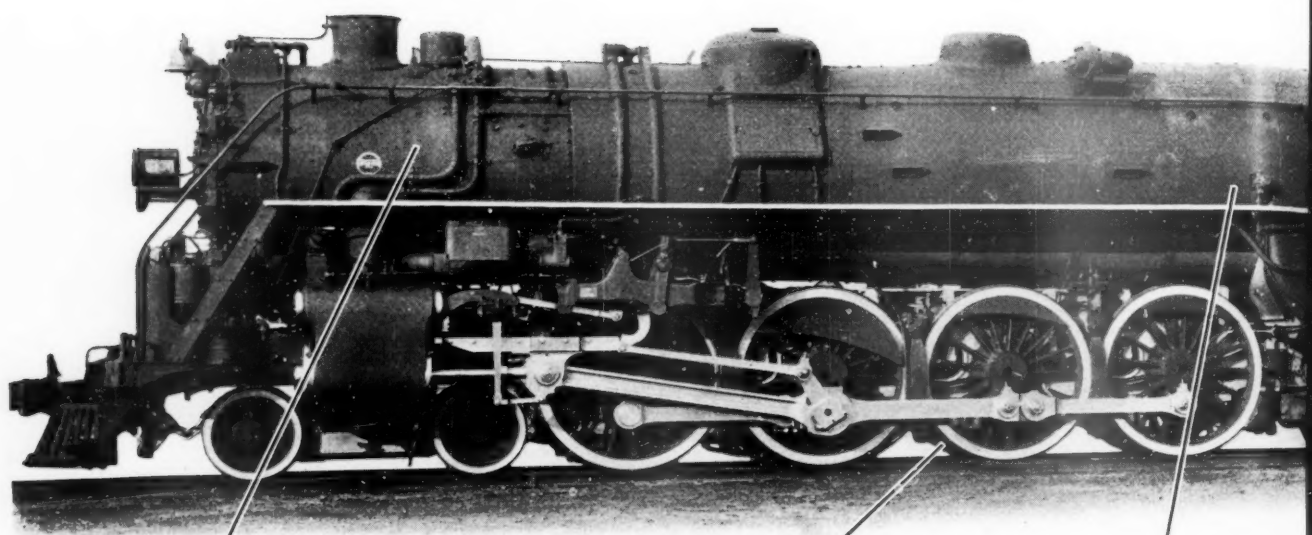
GENERAL STEEL CASTINGS CORPORATION

EDDYSTONE, PA.



GRANITE CITY, ILL.

What makes a locomotive



HIGH DEGREE OF SUPERHEAT

DRIVING WHEELS OF LARGE DIAMETER

GREAT BOILER CAPACITY

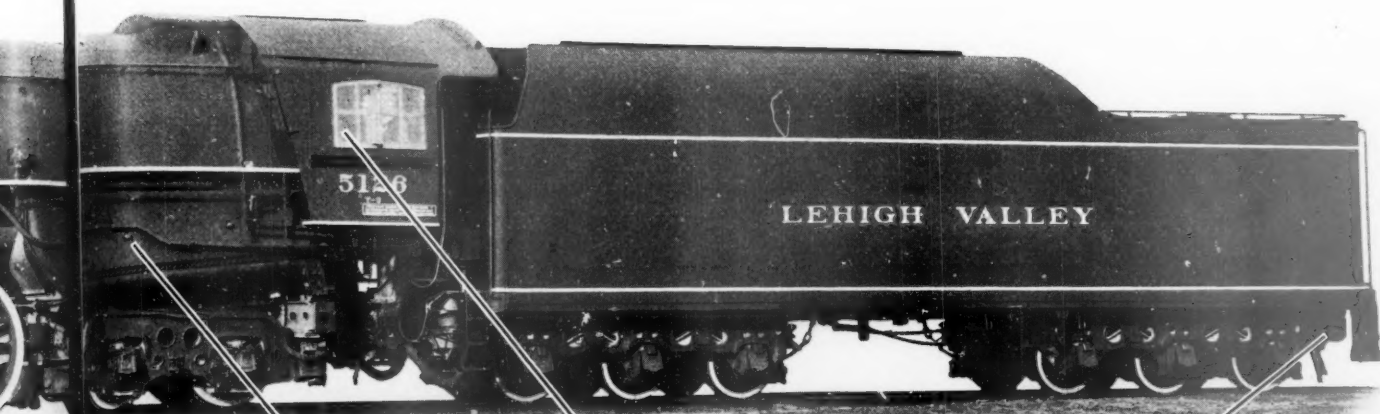
The term "modern locomotive" usually means one built within the past ten or twelve years but it implies a great deal more than that.

The illustration above gives the outstanding characteristics that make a locomotive *truly modern*.

It takes Modern Locomotives

THE BALDWIN

MODERN?



HIGH STEAM PRESSURE

LARGE, WELL PROPORTIONED
FURNACE AND GRATE

GREAT DRAWBAR HORSEPOWER

What do these improvements in design mean in terms of locomotive performance?

1. Greater hauling capacity at speed.
2. Economy in fuel and water.
3. Lower maintenance costs.
4. Better competitive position for the railroads.

to make money these days!

LOCOMOTIVE WORKS

PHILADELPHIA



**THE WORLD'S
SMOOTHEST CONTROL**
Genuine
**BENDIX-WESTINGHOUSE
AIR BRAKES**

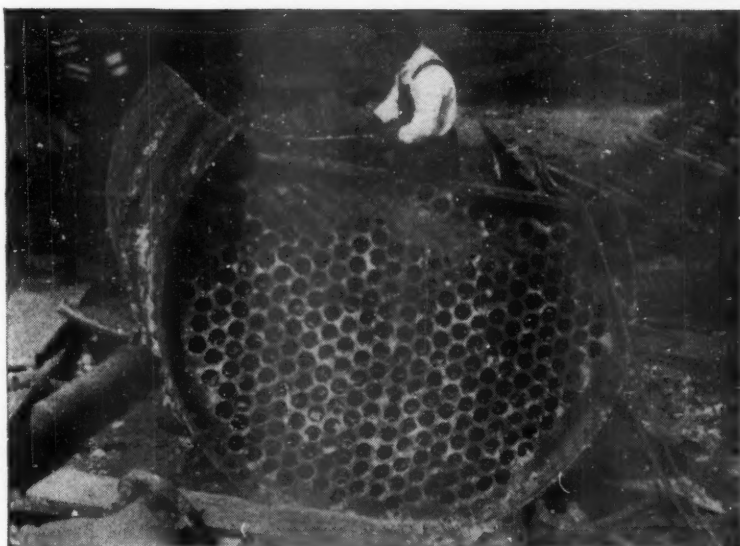
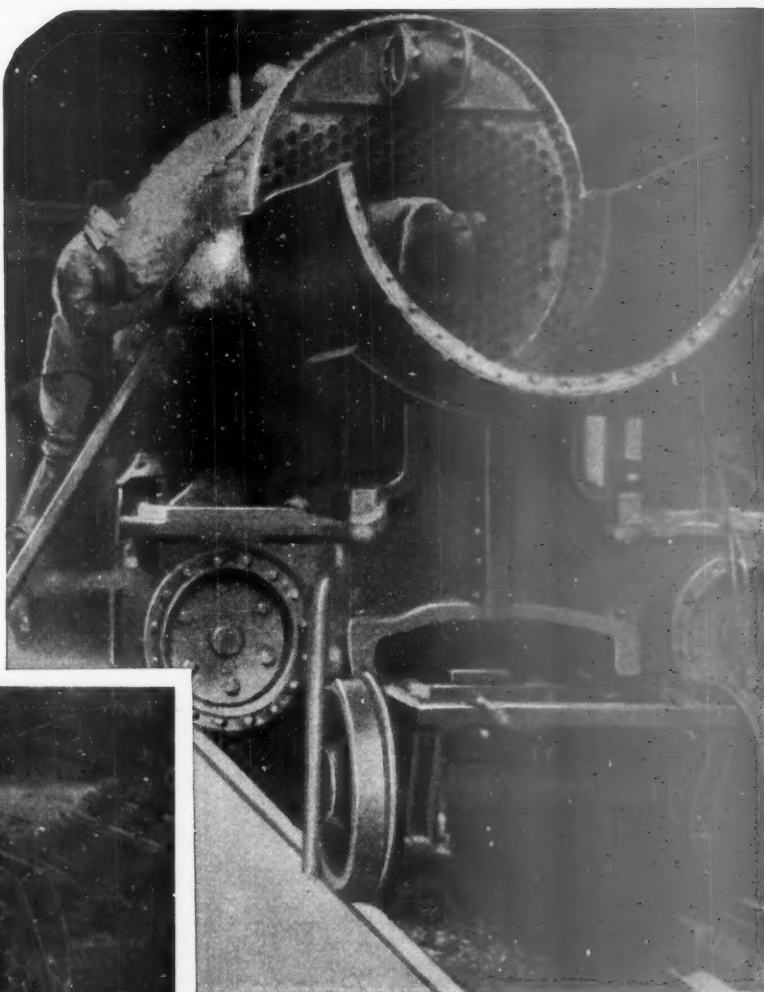
Smooth, soft, effortless, yet a hard, two-fisted, dependable brake capable of surmounting the most exacting demands... that's genuine Bendix-Westinghouse Air Control. A half century old tradition requires such performance and modern service proves that genuine "Air" merely begins where ordinary control leaves off. Economy too is an all important advantage of Bendix-Westinghouse Air Brakes. A saving, in maintenance alone, quickly absorbs their first cost which now runs as low as \$139 completely installed on the lighter commercial units. A card or a letter addressed to the manufacturer will bring you complete information.

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for your Scrap



OXWELD PROCEDURES for scrapping of obsolete locomotives and cars assure speedy and orderly cutting operations as well as a maximum price for the scrap metal.

● Only by reducing your scrap to charging box size, will you get the highest prices. The cost of cutting up obsolete equipment by the oxy-acetylene process is but a fraction of the increase in the price you will receive for the scrap material.

The Oxweld Railroad Service Company will help you plan and carry out scrapping programs which will bring you the highest return on your obsolete cars and locomotives. Oxweld Railroad

Service brings to your yard organized procedures which have proved profitable in practice.

The majority of Class I Railroads have been Oxweld clients for nearly a quarter of a century.

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Unit of Union Carbide and Carbon Corporation



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of trip only
\$58.26
FOR GAS AND OIL



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Look at this
UNMATCHED RECORD
then let
CHEVROLET TRUCKS
reduce your haulage costs

Location of Test Los Angeles to New York
Distance Traveled 3511.5 miles
Running Time 129 hours, 24 minutes
Average Speed 27.14 miles per hour
Gasoline Used 308.6 gallons
Gasoline, miles per gallon 11.378
Oil Consumption 2 quarts
Cost of Fuel \$57.59
Cost of Oil \$.67
Fuel and Oil (cost per mile) \$.016
Average cost per ton mile \$.00328
Water Consumption 1 gallon
No mechanical failures

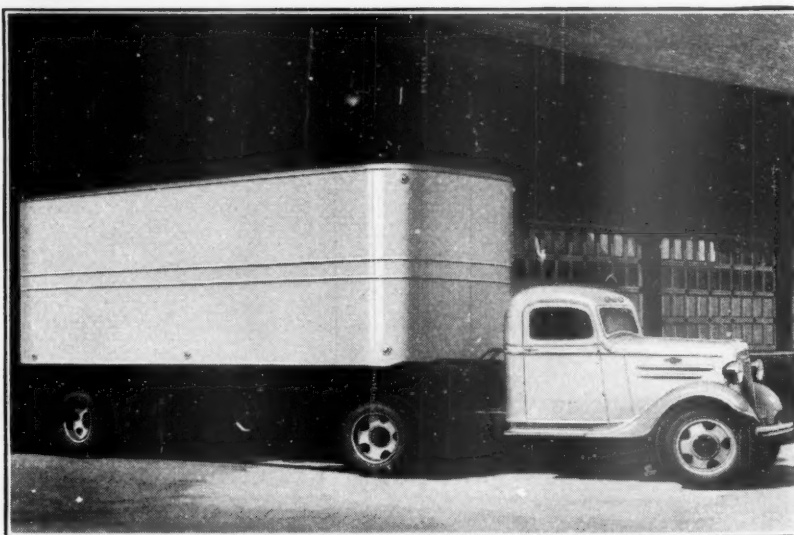
Entire test conducted under supervision of
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with barrel type wheel bearings on 1½-ton models.



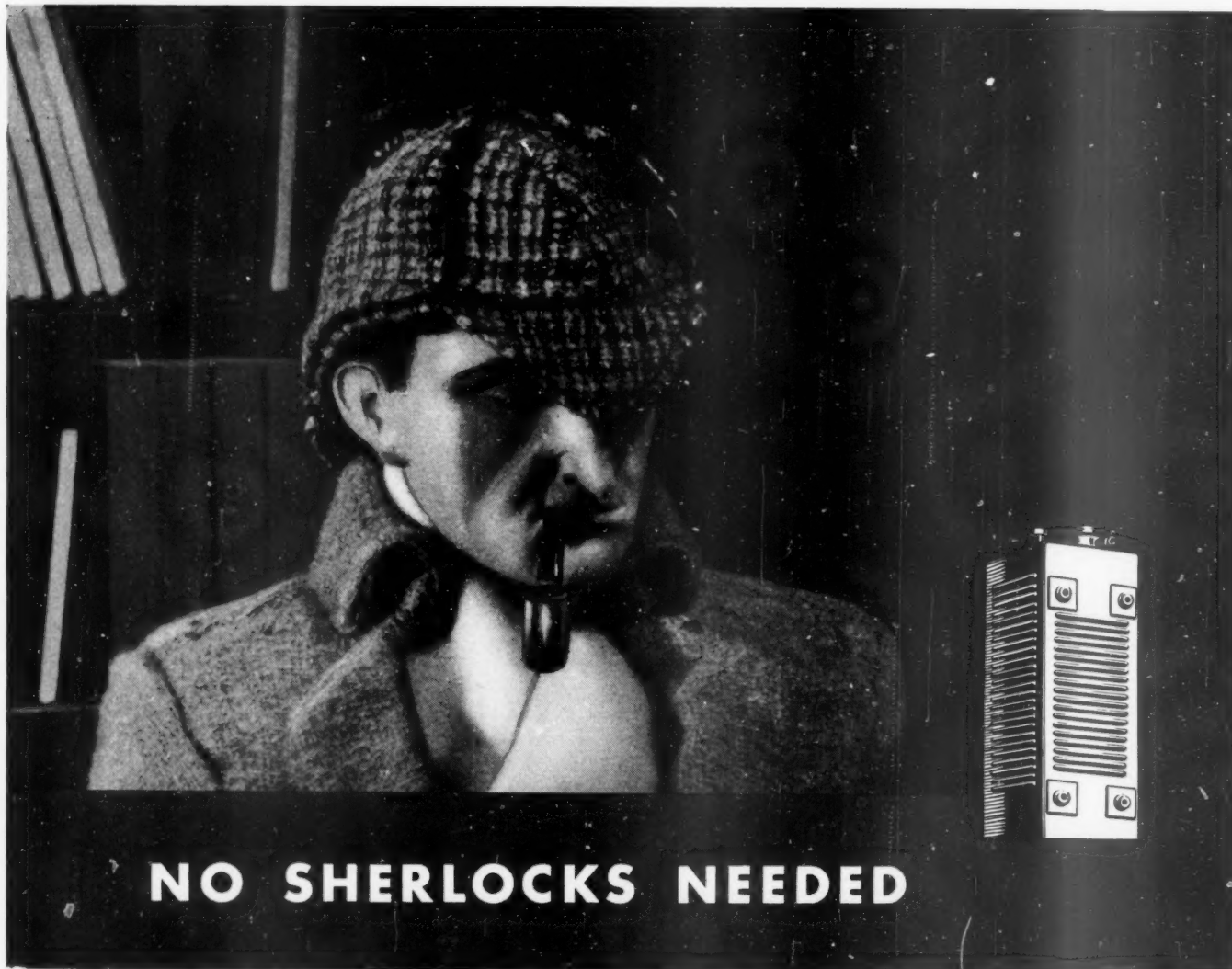
The accompanying picture and record of this unusual test run with a Chevrolet truck give indisputable proof of every claim ever made for the power and economy of Chevrolet trucks.

Consider this remarkable demonstration of great pulling power and dollar-saving economy in terms of your own trucks. Chevrolet truck pulling power, the greatest of any truck in its price class, and Chevrolet valve-in-head engine economy and dependability are the answer to your haulage costs, too.

Get the facts with trial loads—your kind of loads—under conditions that can leave no doubt concerning Chevrolet truck superiority for your haulage needs. Your Chevrolet dealer is ready to give you that test—at your convenience.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

6% NEW MONEY-SAVING G. M. A. C. TIME PAYMENT PLAN
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NO SHERLOCKS NEEDED

Photograph courtesy of Ticonderoga Pencils

WEATHER FORECAST

Warmer weather ahead—more work for the batteries to do! At normal shopping periods the Edison Battery can be given a simple test to predict with assurance that it will not wear out or fall below required capacity before the next shopping period.

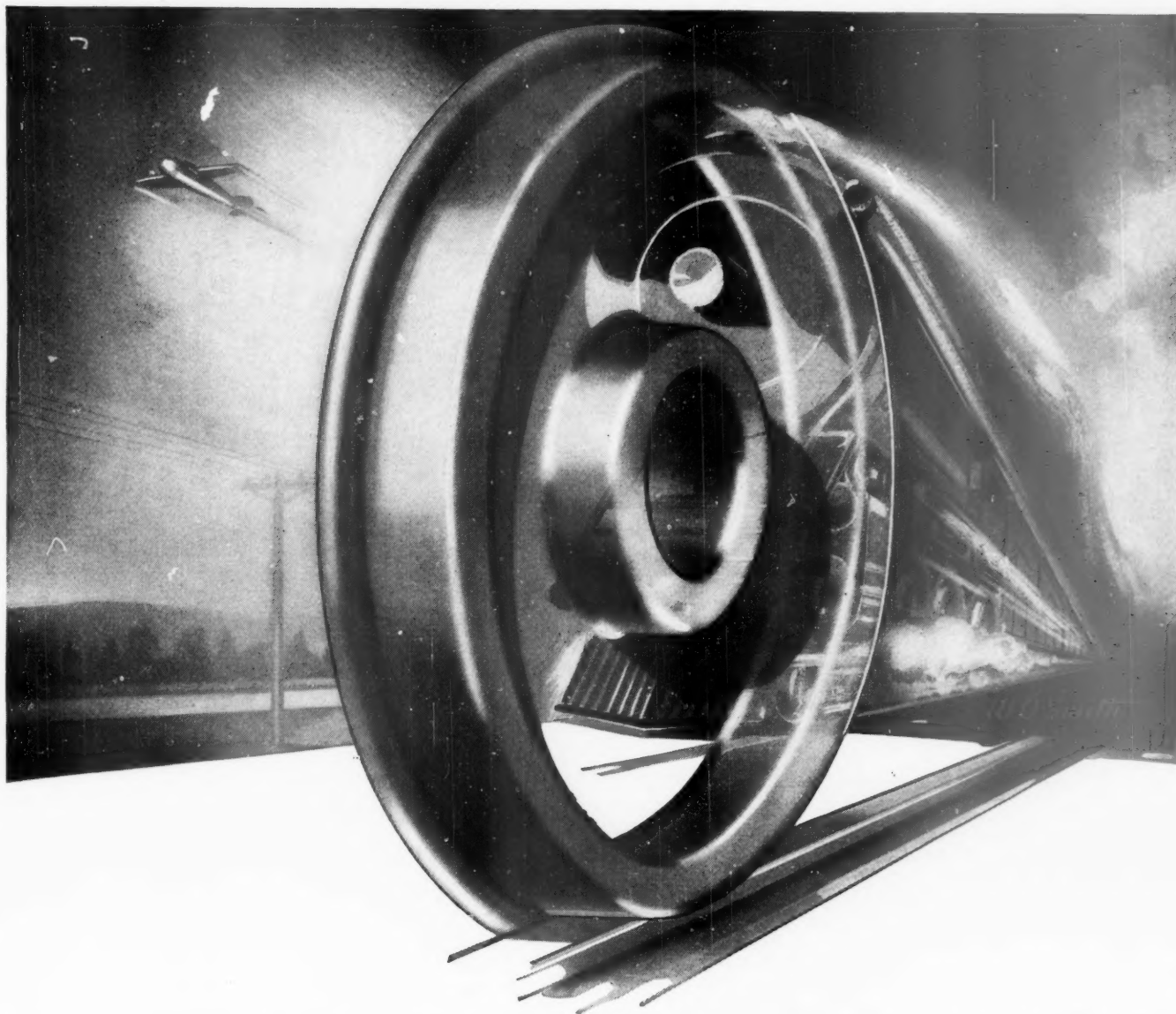
- Battery facts are known. No one ever disputes the facts that the Edison Battery is more dependable...that it is not subject to unexpected failure between car-shoppings...that it weighs less...that it lives the longest...that it is the only steel-alkaline battery made in this country...and that these advantages are exclusively Edison. Every electrical engineer knows that Edison Batteries provide air-conditioning and car-lighting systems with reliable "comfort insurance" for patrons.

Further, in freight, mail and baggage-handling truck service, the extra-dependability of Edison Batteries is good insurance against battery-failure tie-ups, so costly in labor and time. This is why more Edison Batteries are used in industrial truck service than all other makes combined!

And now, with cost-watching experiments completed on many roads it is known that Edison Batteries lower operating costs directly. Lower depreciation charges, fewer maintenance costs, less yard-charging—these are some of the savings that accrue when the battery is alkaline.

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EXTENSIVE research, careful and systematic chemical and foundry investigations and experiments and the hearty cooperation of the railroads are the factors that have placed the chilled car wheel on its present high plane.

Since the chilled car wheel came into general use, about 1850, wheel loads have increased 800 per cent. Today, as the result of the development made in chilled car wheels, one wheel carries as heavy a load as then carried by *eight*, besides providing a greater factor of safety.

Throughout the years of railway progress, the chilled car wheel has kept pace with improvements in car construction and design.

Operating on a definite foundry program, and meeting all A. A. R. specifications, the Members of this Association as listed below are ever ready to supply you with wheels that carry a service guarantee.

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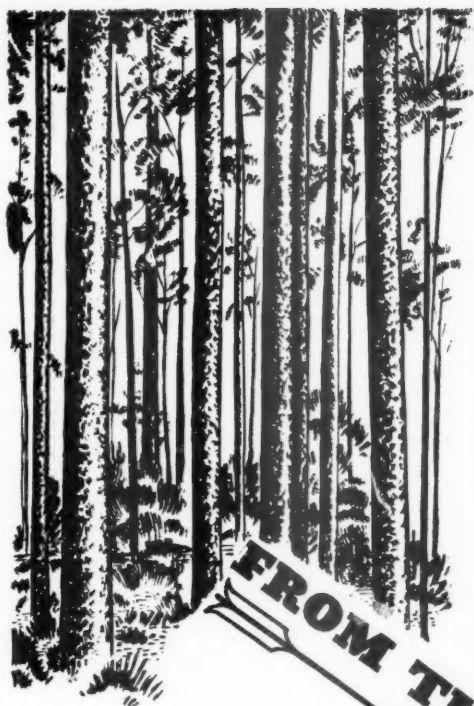
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Marshall Car Wheel & Fdry. Co.
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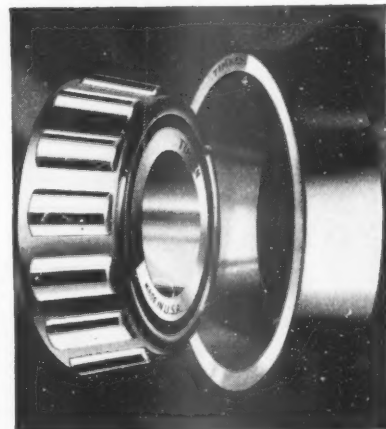


Consistent dependability at the highest operating speeds — even during the exceptionally cold weather of this winter — has made Timken Bearings dominant in America's streamlined trains and locomotives. There is no substitute for the exclusive combination of Timken tapered construction, Timken positively aligned rolls and Timken Alloy Steel.

All journals of the four new "Zephyr" streamlined trains being built by The Edward G. Budd Manufacturing Company for the Chicago, Burlington and Quincy Railroad will be equipped with Timken Bearings.

These new streamliners comprise two 10-car and two 6-car trains. The 10-car trains, which will be known as the "Denver Zephyrs", are intended for overnight service between Chicago and Denver. The 6-car trains will operate between Chicago and the Twin Cities.

With the addition of these four new Zephyrs the Burlington's streamlined fleet will total eight trains — all on Timken Bearings.

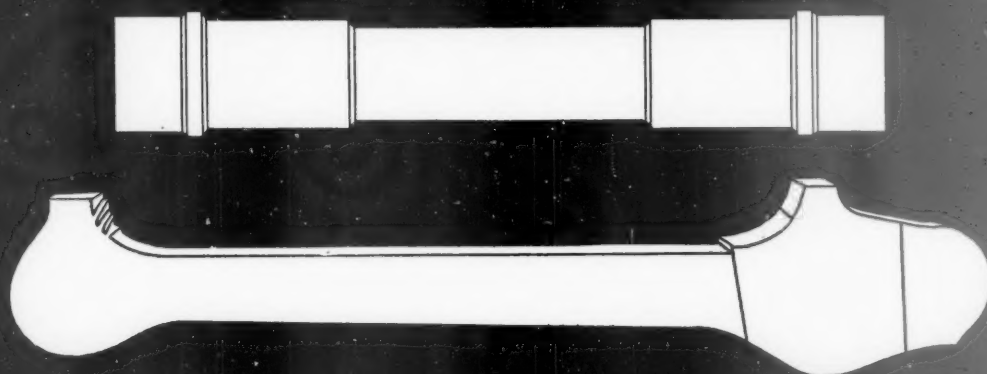


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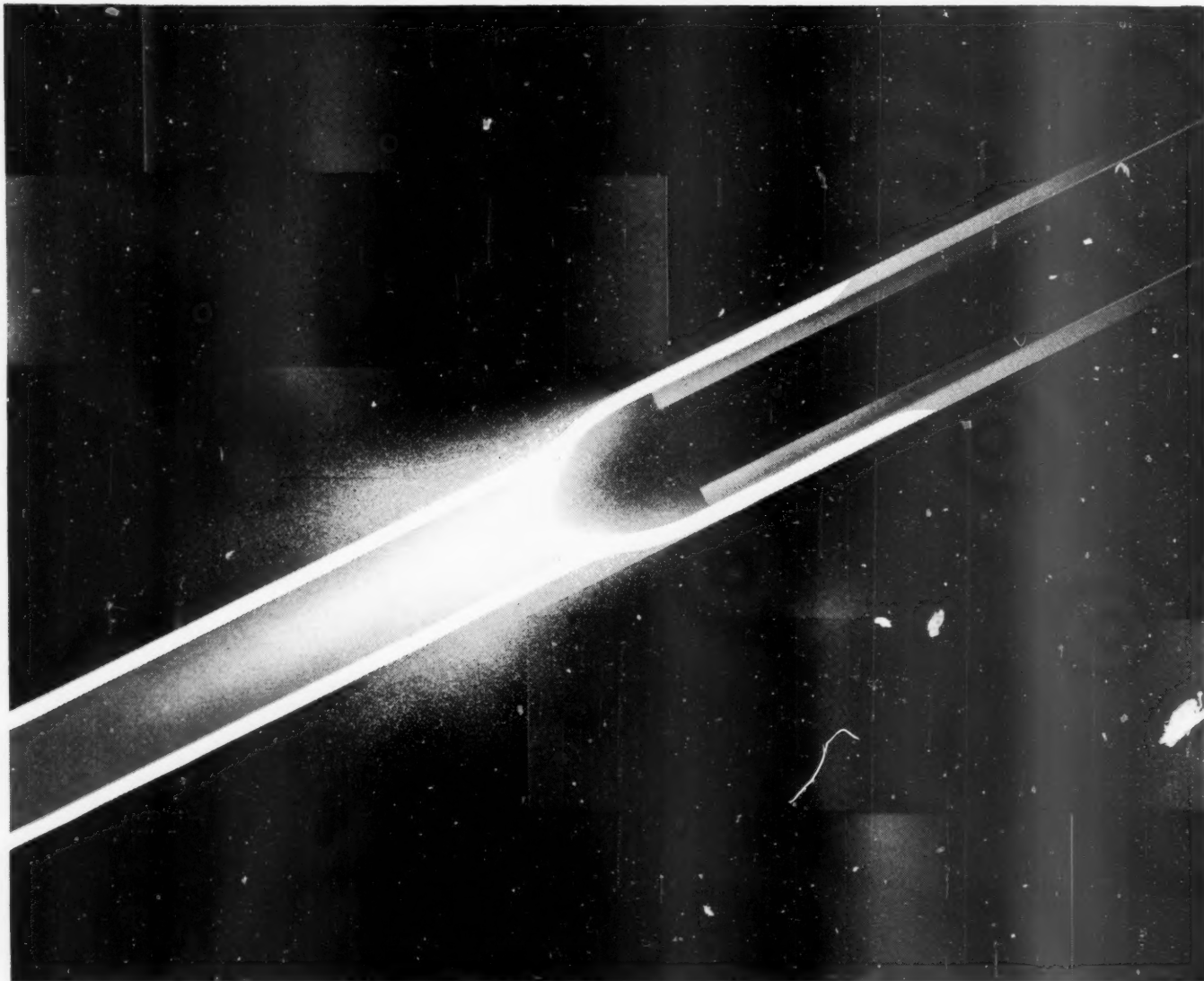
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"Moly" irons and steels have proved this point time and time again. In one case, .35% Molybdenum added to a cast-iron reeler plug increased production to 200 tubes per plug as against 80 to 90 formerly.

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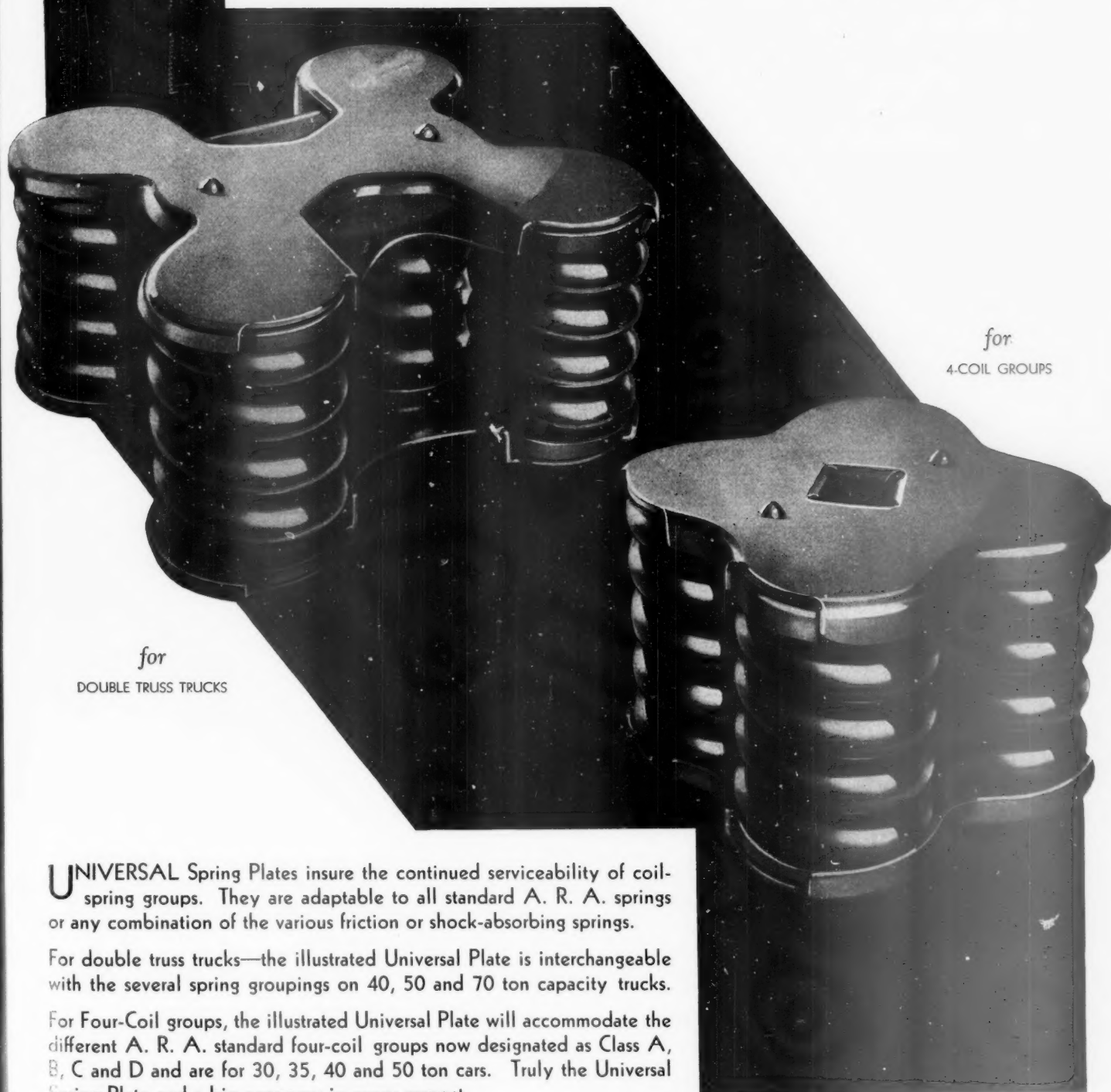
Moly steels and irons are usually less expensive than other alloyed steels and irons intended for like uses. And on the basis of their relative fitness or capacity for a given job, they are invariably cheaper.

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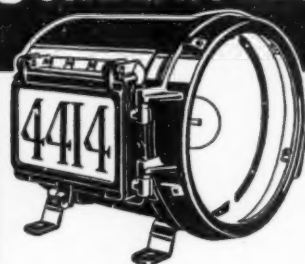
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STREAMLINED TRAINS

FOR more than 40 years Agasote and Pantasote have demonstrated their utility, durability and economy by rendering eminently satisfactory service in passenger equipment. It was but logical, therefore, that these two superior materials should have been selected for the 1300 new Eighth Avenue subway cars and used on practically all the new streamlined trains.

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Out of the experienced past, into the exacting present, KERITE wires and cables, through three-quarters of a century of successful service, continue as the standard by which engineering judgment measures insulating value.



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Testing strength of Bakelite Resin Varnish film at Bloomfield Laboratory

THIS sensitive measuring instrument tells exactly. There is no guessing, no rule of thumb, no biased opinion about its findings. It measures the elasticity and toughness of a paint film, and indicates its findings on the scale. This instrument has proved that protective coatings correctly formulated with Bakelite Synthetic Resins are superior in toughness and elasticity, and consequently more resistant to abrasive wear.

To metal coatings, anti-corrosive primers, passenger car varnish and enamel, and other railroad finishes, Bakelite Resins impart lasting toughness and elasticity, unusual moisture-proofness, and high resistance to smoke, fumes, flying cinders, brine, oil and strong soaps.

In practical service, both inland and at sea level, coatings based on Bakelite Resin are now demonstrating their ability to furnish better protection for steel, and to maintain fine appearance, over appreciably longer periods of time.

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BAKELITE CORPORATION, 247 Park Avenue, New York
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Duplex Sectional Packing
For Locomotive Valves



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GUN IRON

Burroughs

SIMPLIFIES PAYROLL ACCOUNTING *and gives you the additional information required by the* SOCIAL SECURITY ACT

While you are considering how best to handle your payroll and earnings records in order to meet the provisions of the Federal Social Security Act and related legislation—investigate these new Burroughs developments in the complete line of Burroughs bookkeeping and accounting machines. They make it possible to select exactly the equipment you need to enable you to handle your payroll and earnings records with exceptional speed, ease and economy.

Here is a typical comment: "Our new Burroughs equipment is not only an easy solution to the accounting problems set up by the Federal Social Security Act, but we are actually handling all our labor accounting, including the extra work, at a lower cost than before." Another typical comment: "We are glad the Social Security Act prompted us to investigate because we now have the complete payroll accounting system we have needed for a long time."

To find out how Burroughs can assist you to meet your own problem with the minimum change in equipment, and at the lowest possible accounting cost, telephone the local Burroughs office. Or, if more convenient, mail the coupon below.

MAIL THIS COUPON TODAY!

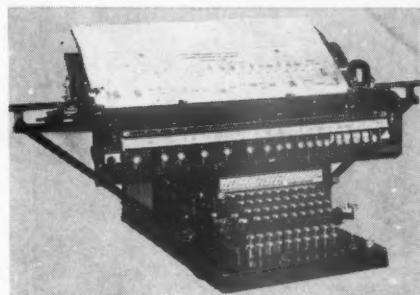
Burroughs Adding Machine Company
6533 Second Boulevard, Detroit, Michigan

Send me the new folder, "Modern Payroll Methods"—which includes illustrations of forms for compiling figures required by the Federal Social Security Act.

Name _____

Address _____

NEW MACHINES FOR PAYROLL ACCOUNTING



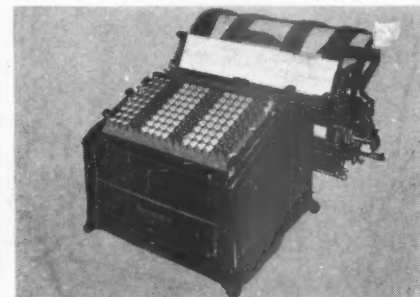
Burroughs Typewriter Payroll Accounting Machine writes check, earnings record, employee's statement and payroll summary in one operation. Column selection automatically controlled. All totals accumulated.



Burroughs Desk Bookkeeping Machine posts earnings records, automatically prints dates in proper columns, automatically subtracts deductions—calculates net pay.



Burroughs Electric Carriage Check-Writing Typewriter writes payroll checks either in units or in strips. Payroll summary completed at same operation. Fast and easy insertion and removal of checks.



Burroughs Automatic Payroll Machine writes check, employee's earnings statement, earnings record and payroll summary in one operation. Accumulates all necessary totals, automatically ejects and stacks checks in order.

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